



## Film Capacitors

### Metallized Polyester Film Capacitors (MKT)

**Series/Type:** B32591 ... B32594

**Date:** May 2009

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32592C1155M010	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155M008	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155K289	B32522C1155*	2013-03-01	2013-05-31	2013-08-31

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Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32592C1155K189	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155K011	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155K010	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155K008	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155J289	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155J189	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155J011	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155J010	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155J008	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C6683K289	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683K189	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683K011	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683K010	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683K008	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683J289	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683J189	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683J011	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683J010	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683J008	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6474M289	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32592C6474M189	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32592C6474M011	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32592C6474M010	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32592C6474M008	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334M011	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474K289	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334M010	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474K189	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334K011	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474K011	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334J008	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474K010	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334J011	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474K008	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334J010	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474J289	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334J189	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474J189	B32522E6474*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32591C3334J289	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474J011	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3334K008	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C6474J010	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3474K010	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6474J008	B32522E6474*	2013-03-01	2013-05-31	2013-08-31
B32591C3474K189	B32521C3474*	2013-03-01	2013-05-31	2013-08-03
B32592C6334M289	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474K289	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334M189	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474M008	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334M011	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474M011	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334M010	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474M010	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334M008	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474M189	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334K289	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474M289	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334K189	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474J011	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334K011	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474J010	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334K010	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474J189	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334K008	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474J289	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334J289	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474K008	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334J189	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474K011	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334J011	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32591C3474J008	B32521C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C6334J010	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32592C6334J008	B32522E6334*	2013-03-01	2013-05-31	2013-08-31
B32592C6224M289	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224M189	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224M011	B32522E6224*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32592C6224M010	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224M008	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224K289	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224K189	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224K011	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224K010	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224K008	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32591C6223K011	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223M008	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223M011	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223M010	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223K010	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223K189	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223K289	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C1105M289	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105M189	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105M011	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105M010	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105M008	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105K289	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105K189	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105K011	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105K010	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105K008	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105J289	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105J189	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105J011	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105J010	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C1105J008	B32522C1105*	2013-03-01	2013-05-31	2013-08-31
B32592C6224J289	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224J189	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224J011	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224J010	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6224J008	B32522E6224*	2013-03-01	2013-05-31	2013-08-31
B32592C6154M289	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154M189	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154M011	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154M010	B32522E6154*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
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B32592C6154K289	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154K189	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154K011	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154K010	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154K008	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32592C6154J289	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32591C6223J008	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6154J189	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32591C6223J011	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6154J011	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32591C6223J010	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6154J010	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32591C6223J189	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6154J008	B32522E6154*	2013-03-01	2013-05-31	2013-08-31
B32591C6223J289	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6104M289	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6223K008	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32592C6104M189	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104M011	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104M010	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104M008	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104K289	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104K189	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104K011	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104K010	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104K008	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104J289	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104J189	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104J011	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104J010	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C6104J008	B32522E6104*	2013-03-01	2013-05-31	2013-08-31
B32592C3684M289	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333K010	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684M189	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333K189	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684M011	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333K289	B32521E6333*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
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B32591C6333M008	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684M008	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333M011	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684K289	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333M010	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684K189	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333M189	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684K011	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333M289	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684K010	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333J008	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684K008	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333J011	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684J289	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333J010	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684J189	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333J189	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684J011	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333J289	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684J010	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333K008	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32592C3684J008	B32522C3684*	2013-03-01	2013-05-31	2013-08-31
B32591C6333K011	B32521E6333*	2013-03-01	2013-05-31	2013-08-31
B32591C6473M289	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C1154M189	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154M289	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154K011	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154K010	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154K189	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154K289	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154M008	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154M011	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154M010	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154J008	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154J011	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1104M289	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104M189	B32521C1104*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
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B32591C1104M010	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104M008	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104K289	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104K189	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104K011	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104K010	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104K008	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104J289	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104J189	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104J011	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104J010	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C1104J008	B32521C1104*	2013-03-01	2013-05-31	2013-08-31
B32591C6103K189	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103K289	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103M008	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103M011	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103M010	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103M189	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C3683K010	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683K189	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683K289	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683M008	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683M011	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683M010	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683J010	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683J189	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683J289	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683K008	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683J008	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683J011	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3104M189	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C1154J010	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154J189	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154J289	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1154K008	B32521C1154*	2013-03-01	2013-05-31	2013-08-31
B32591C1224M189	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224M289	B32521C1224*	2013-03-01	2013-05-31	2013-08-31



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B32591C1224K011	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224K010	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224K189	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224K289	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224M008	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224M010	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224M011	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224J008	B32521C1224*	2013-03-01	2013-05-31	2013-08-31
B32591C1224J010	B32521C1224	2013-03-01	2013-05-31	2013-08-31
B32591C1224J189	B32521C1224	2013-03-01	2013-05-31	2013-08-31
B32591C1224J289	B32521C1224	2013-03-01	2013-05-31	2013-08-31
B32591C1224K008	B32521C1224	2013-03-01	2013-05-31	2013-08-31
B32591C1224J011	B32521C1224	2013-03-01	2013-05-31	2013-08-31
B32591C1334M189	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334M289		2013-03-01	2013-05-31	2013-08-31
B32591C1334K011	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334K010	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334K189	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334K289	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334M008	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334M010	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334M011	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334J008	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334J011	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334J010	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334J189	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334J289	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1334K008	B32521C1334*	2013-03-01	2013-05-31	2013-08-31
B32591C1474K189	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474K289	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474M008	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C6473M189	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473K011	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473K010	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473K189	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473K289	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473M008	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473M011	B32521E6473*	2013-03-01	2013-05-31	2013-08-31





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B32591C6473M010	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473J010	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473J189	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473J289	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473K008	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473J008	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6473J011	B32521E6473*	2013-03-01	2013-05-31	2013-08-31
B32591C6683M189	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683M289	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683K010	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683K189	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683K289	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683M008	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683M011	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683M010	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683K011	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683J008	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683J011	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683J010	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683J189	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683J289	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6683K008	B32521E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6104M289	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104M189	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104K011	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104K010	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104K189	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104K289	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104M008	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104M010	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104M011	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104J008	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104J011	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104J010	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104J189	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104J289	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C6104K008	B32521E6104*	2013-03-01	2013-05-31	2013-08-31
B32591C3333M010	B32521C3333*	2013-03-01	2013-05-31	2013-08-31



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B32591C3333M189	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C1684M010	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684M189	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684J010	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684J189	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1474M011	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474M010	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474M189	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474M289	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474J008	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474J011	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474J010	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474J189	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474J289	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474K011	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474K010	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1474K008	B32521C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C1684M289	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684K011	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684K010	B32521C1684*	2013-03-01	2013-05-31	2031-08-31
B32591C1684K189	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684K289	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684M008	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684M011	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684J289	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684K008	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684J008	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1684J011	B32521C1684*	2013-03-01	2013-05-31	2013-08-31
B32591C1105M010	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105M189	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105M289	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105J289	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105M011	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105K008	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105K011	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105K010	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105K189	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105K289	B32521C1105*	2013-03-01	2013-05-31	2013-08-31



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B32591C1105M008	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105J011	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105J010	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105J189	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C1105J008	B32521C1105*	2013-03-01	2013-05-31	2013-08-31
B32591C3333M289	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333K010	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333K189	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333K289	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333M008	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333M011	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333J010	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333J189	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333J289	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333K008	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333K011	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333J008	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3333J011	B32521C3333*	2013-03-01	2013-05-31	2013-08-31
B32591C3473M189	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473M289	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473K010	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473K189	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473K289	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473M008	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473M011	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473M010	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473K011	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473J008	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473J011	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473J010	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473J189	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473J289	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3473K008	B32521C3473*	2013-03-01	2013-05-31	2013-08-31
B32591C3683M189	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683M289	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32591C3683K011	B32521C3683*	2013-03-01	2013-05-31	2013-08-31
B32592C3474M289	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474M189	B32522C3474*	2013-03-01	2013-05-31	2013-08-31



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B32592C3474M011	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474M010	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474M008	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474K289	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474K189	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474K011	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474K010	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474K008	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474J289	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474J189	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474J011	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474J010	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3474J008	B32522C3474*	2013-03-01	2013-05-31	2013-08-31
B32592C3334M289	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334M189	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334M011	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334M010	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334M008	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334K289	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334K189	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334K011	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334K010	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334K008	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334J289	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334J189	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334J011	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334J010	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3334J008	B32522C3334*	2013-03-01	2013-05-31	2013-08-31
B32592C3224M289	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224M189	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224M011	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224M010	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224M008	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224K289	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224K189	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224K011	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224K010	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224K008	B32522C3224*	2013-03-01	2013-05-31	2013-08-31



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B32592C3224J289	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224J189	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224J011	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224J010	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3224J008	B32522C3224*	2013-03-01	2013-05-31	2013-08-31
B32592C3105M289	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105M189	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105M011	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105M010	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105M008	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32591C3104M289	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104K010	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104K189	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104K289	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104M008	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104M011	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104M010	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104K011	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104J008	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104J011	B32521C3104*	2013-03-01	2013-05-23	2013-08-31
B32591C3104J010	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104J189	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104J289	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3104K008	B32521C3104*	2013-03-01	2013-05-31	2013-08-31
B32591C3154M189	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154M289	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154K010	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154K189	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154K289	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154M008	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154M011	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154M010	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154K011	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154J008	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154J011	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154J010	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154J189	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3154J289	B32521C3154*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32591C3154K008	B32521C3154*	2013-03-01	2013-05-31	2013-08-31
B32591C3224M189	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224M289	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224K010	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224K189	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224K289	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224M008	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224M011	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224M010	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C6103M289	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103J011	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103J010	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103J189	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103J289	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103K008	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103K011	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103K010	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32591C6103J008	B32521E6103*	2013-03-01	2013-05-31	2013-08-31
B32592C3105K289	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105K189	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105K011	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105K010	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105K008	B32522C3105*	2013-03-01	2013-05-31	
B32592C3105J289	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105J189	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C3105J011	B32522C3105*	2013-03-01	2013-05-31	
B32592C3105J010	B32522C3105*	2013-03-01	2013-05-31	
B32592C3105J008	B32522C3105*	2013-03-01	2013-05-31	2013-08-31
B32592C1684M289	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684M189	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684M011	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684M010	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684M008	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684K289	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684K189	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684K011	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684K010	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684K008	B32522C1684*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32592C1684J289	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684J189	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684J011	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684J010	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1684J008	B32522C1684*	2013-03-01	2013-05-31	2013-08-31
B32592C1475M289	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475M189	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475M011	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475M010	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475M008	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475K289	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475K189	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475K011	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475K010	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475K008	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475J289	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475J189	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475J011	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475J010	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1475J008	B32522C1475*	2013-03-01	2013-05-31	2013-08-31
B32592C1474M289	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474M189	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474M011	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474M010	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474M008	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474K289	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474K189	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474K011	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474K010	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474K008	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32591C6153K189	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32591C6153K289	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32591C6153M008	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32591C6153M011	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32591C6153M010	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684M289	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153M189	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684M189	B32522E6684*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32591C6153M289	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684M011	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153K010	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684M010	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32592C6684M008	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153J008	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684K289	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153J011	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684K189	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153J010	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684K011	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153J189	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684K010	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153J289	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684K008	B32522E6684*	2013-03-01	2013-08-31	2013-05-31
B32591C6153K008	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684J289	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32591C6153K011	B32521E6153*	2013-03-01	2013-05-31	2013-08-31
B32592C6684J189	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32592C6684J011	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32592C6684J010	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32592C6684J008	B32522E6684*	2013-03-01	2013-05-31	2013-08-31
B32592C6683M289	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683M189	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683M011	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683M010	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32592C6683M008	B32522E6683*	2013-03-01	2013-05-31	2013-08-31
B32591C6223M189	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C6223M289	B32521E6223*	2013-03-01	2013-05-31	2013-08-31
B32591C3224K011	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224J008	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224J011	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224J010	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224J189	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224J289	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3224K008	B32521C3224*	2013-03-01	2013-05-31	2013-08-31
B32591C3334M189	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32591C3334M289	B32521C3334*	2013-03-01	2013-05-31	2013-08-31





Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32591C3334K010	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32591C3334K189	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32591C3334K289	B32521C3334*	2013-03-01	2013-05-31	2013-08-31
B32591C3334M008	B32521C3334*	2013-03-01	2000-05-31	2013-08-31
B32592C1474J289	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474J189	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474J011	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474J010	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1474J008	B32522C1474*	2013-03-01	2013-05-31	2013-08-31
B32592C1335M289	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335M189	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335M011	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335M010	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335M008	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335K289	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335K189	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335K011	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335K010	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335K008	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335J289	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335J189	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335J011	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335J010	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1335J008	B32522C1335*	2013-03-01	2013-05-31	2013-08-31
B32592C1225M289	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225M189	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225M011	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225M010	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225M008	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225K289	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225K189	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225K011	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225K010	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225K008	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225J289	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225J189	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225J011	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1225J010	B32522C1225*	2013-03-01	2013-05-31	2013-08-31



Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B32592C1225J008	B32522C1225*	2013-03-01	2013-05-31	2013-08-31
B32592C1155M289	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155M189	B32522C1155*	2013-03-01	2013-05-31	2013-08-31
B32592C1155M011	B32522C1155*	2013-03-01	2013-05-31	2013-08-31

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.epcos.com/sales](http://www.epcos.com/sales).

**General purpose (stacked/wound)**
**Typical applications**

- Compact fluorescent lamps (CFL)
- Blocking
- Coupling, decoupling
- Bypassing

**Climatic**

- Max. operating temperature: 125 °C
- Climatic category (IEC 60068-1): 55/100/56

**Features**

- High pulse strength
- High contact reliability

**Construction**

- Dielectric: polyethylene terephthalate (polyester, PET)
- Stacked-film technology for lead spacing 10 and 15 mm (100 ... 400 V DC); Wound capacitor technology for lead spacing 10 and 15 mm (630 V DC) as well as for lead spacing 22.5 and 27.5 mm
- Epoxy resin coating (UL 94 V-0)

**Terminals**

- Crimped wire leads, lead-free tinned, lead length 6 – 1 mm or min. 20 mm
- Straight wire leads, lead-free tinned, lead length 17 ± 3 mm
- Different lead spacings (reduced and enlarged) available, lead length 6 – 1 mm

**Marking**

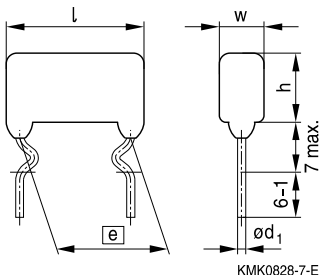
Manufacturer's logo,  
 rated capacitance (coded),  
 capacitance tolerance (code letter),  
 rated DC voltage,  
 additional for lead spacing ≥ 15 mm:  
 style, type, date of manufacture (coded)

**Delivery mode**

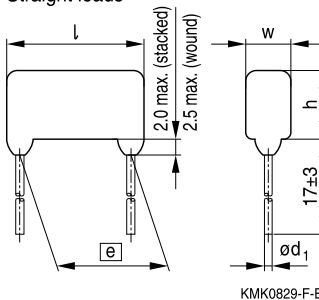
Bulk (untaped)  
 Taped (Ammo pack or reel) for lead spacing ≤ 22.5 mm.  
 For notes on taping, refer to chapter "Taping and packing".

**Dimensional drawing**

Crimped leads



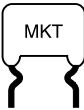
Straight leads



Dimensions in mm

Lead spacing	Lead diameter	Type
$e \pm 0.8$	$d_1$	
10.0	0.6 <sup>1)</sup>	B32591
15.0	0.6	B32592
22.5	0.8	B32593
27.5	0.8	B32594





 1) 0.5 mm for capacitor width  $w \leq 5$  mm

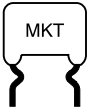

**Overview of available types**

Lead spacing	10.0 mm				15.0 mm				22.5 mm			
Type	B32591				B32592				B32593			
Page	5				6				7			
Technology	s	s	s	w	s	s	s	w	w	w	w	w
$V_R$ (V DC)	100	250	400	630	100	250	400	630	100	250	400	630
$V_{RMS}$ (V AC)	63	160	200	200	63	160	200	200	63	160	200	200
$C_R$ ( $\mu$ F)												
0.010												
0.015												
0.022												
0.033												
0.047												
0.068												
0.10												
0.15												
0.22												
0.33												
0.47												
0.68												
1.0												
1.5												
2.2												
3.3												
4.7												
6.8												

Technology: s = Stacked-film technology / w = Wound capacitor technology

**Lead configurations**





Series	Standard	Reduced	Enlarged	Straight
				
B32591	10 mm	5 / 7.5 mm	–	10 mm
B32592	15 mm	7.5 / 10 / 12.5 mm	17.5 mm	15 mm
B32593	22.5 mm	17.5 / 20 mm	25 mm	22.5 mm
B32594	27.5 mm	25 mm	–	27.5 mm

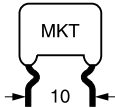

**B32591 ... B32594**
**General purpose (stacked/wound)**
**Overview of available types**

Lead spacing	27.5 mm			
Type	B32594			
Page	8			
Technology	w	w	w	w
$V_R$ (V DC)	100	250	400	630
$V_{RMS}$ (V AC)	63	160	200	220
$C_R$ ( $\mu$ F)				
0.33				
0.47				
0.68				
1.0				
1.5				
2.2				
3.3				
4.7				
6.8				
10				

Technology: s = Stacked-film technology / w = Wound capacitor technology

**Lead configurations**

Series	Standard	Reduced	Enlarged	Straight
				
B32591	10 mm	5 / 7.5 mm	–	10 mm
B32592	15 mm	7.5 / 10 / 12.5 mm	17.5 mm	15 mm
B32593	22.5 mm	17.5 / 20 mm	25 mm	22.5 mm
B32594	27.5 mm	25 mm	–	27.5 mm


**Ordering codes and packing units (lead spacing 10 mm)**

V <sub>R</sub>	V <sub>RMS</sub> f ≤ 60 Hz	C <sub>R</sub>	Max. dimensions w × h × l	Ordering code (composition see below)	Ammo pack	Reel pcs./ MOQ	Untaped pcs./ MOQ
V DC	V AC	μF	mm		pcs./MOQ		
100	63	0.10	5.0 × 9.0 × 13.0	B32591C1104+***	3600	6000	6000
		0.15	5.0 × 9.0 × 13.0	B32591C1154+***	3600	6000	6000
		0.22	5.0 × 9.0 × 13.0	B32591C1224+***	3600	6000	6000
		0.33	5.5 × 9.0 × 13.0	B32591C1334+***	2720	5200	6000
		0.47	6.0 × 9.5 × 13.0	B32591C1474+***	2400	5200	4000
		0.68	7.0 × 10.5 × 13.0	B32591C1684+***	2000	4000	4000
		1.0	8.0 × 15.0 × 13.0	B32591C1105+***	1800	3600	2000
250	160	0.033	5.0 × 9.0 × 13.0	B32591C3333+***	3600	6000	6000
		0.047	5.0 × 9.0 × 13.0	B32591C3473+***	3600	6000	6000
		0.068	5.0 × 9.0 × 13.0	B32591C3683+***	3600	6000	6000
		0.10	5.0 × 9.0 × 13.0	B32591C3104+***	3600	6000	4000
		0.15	5.5 × 10.0 × 13.0	B32591C3154+***	2720	5200	4000
		0.22	6.0 × 10.5 × 13.0	B32591C3224+***	2720	5200	4000
		0.33	6.5 × 11.0 × 13.0	B32591C3334+***	2320	4400	4000
		0.47	8.0 × 13.5 × 13.0	B32591C3474+***	1800	3600	2000
400	200	0.010	5.0 × 9.0 × 13.0	B32591C6103+***	3320	6000	6000
		0.015	5.0 × 9.0 × 13.0	B32591C6153+***	3320	6000	6000
		0.022	5.0 × 9.0 × 13.0	B32591C6223+***	3320	6000	6000
		0.033	5.0 × 9.0 × 13.0	B32591C6333+***	3320	6000	6000
		0.047	5.0 × 10.5 × 13.0	B32591C6473+***	3320	6000	4000
		0.068	5.5 × 10.5 × 13.0	B32591C6683+***	3320	5200	4000
		0.10	6.0 × 11.5 × 13.0	B32591C6104+***	3120	5200	4000
		630	200	0.010 ∇	6.5 × 10.5 × 13.0	B32591C8103+***	2400
0.015 ∇	6.5 × 10.5 × 13.0			B32591C8153+***	2400	4400	2000
0.022 ∇	7.5 × 11.5 × 13.0			B32591C8223+***	2000	4000	2000

∇ Wound capacitor technology

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%

\*\*\* = Packaging code:

289 = Ammo pack

189 = Reel

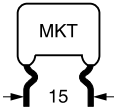
010 = Untaped (lead length 6 – 1 mm)

011 = Untaped (lead length min. 20 mm)

008 = Untaped straight (lead length 17±3 mm)

Packaging codes for further lead configurations (untaped):

Reduced lead configuration (lead length 6 – 1 mm)	Reduced	Reduced
Lead spacing (mm) / Packaging code	5 / 035	7.5 / 030


**B32592**
**General purpose (stacked/wound)**
**Ordering codes and packing units (lead spacing 15 mm)**

$V_R$	$V_{RMS}$ $f \leq 60$ Hz	$C_R$	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./MOQ	Reel pcs./ MOQ	Untaped pcs./ MOQ
V DC	V AC	$\mu F$					
100	63	0.47	5.0 × 9.5 × 18.0	B32592C1474+***	4680	6000	4000
		0.68	5.5 × 10.5 × 18.0	B32592C1684+***	4000	5200	4000
		1.0	6.5 × 10.5 × 18.0	B32592C1105+***	3320	4400	2000
		1.5	7.5 × 14.0 × 18.0	B32592C1155+***	3120	3720	2000
		2.2	9.0 × 14.0 × 18.0	B32592C1225+***	2560	3320	1000
		3.3	11.0 × 17.5 × 18.0	B32592C1335+***	2000	2560	1000
		4.7	11.0 × 17.5 × 18.0	B32592C1475+***	2000	2560	1000
250	160	0.22	5.5 × 9.0 × 18.0	B32592C3224+***	4000	5200	4000
		0.33	6.0 × 10.0 × 18.0	B32592C3334+***	3720	5200	2000
		0.47	7.0 × 11.0 × 18.0	B32592C3474+***	3120	4000	2000
		0.68	8.0 × 11.5 × 18.0	B32592C3684+***	2720	3600	2000
		1.0	9.5 × 13.0 × 18.0	B32592C3105+***	2320	3120	2000
400	200	0.068	5.0 × 9.0 × 18.0	B32592C6683+***	4680	6000	4000
		0.10	5.0 × 10.0 × 18.0	B32592C6104+***	4680	6000	4000
		0.15	6.0 × 10.5 × 18.0	B32592C6154+***	3720	5200	4000
		0.22	7.0 × 11.0 × 18.0	B32592C6224+***	3120	4000	2000
		0.33	8.0 × 12.0 × 18.0	B32592C6334+***	2720	3600	2000
		0.47	9.5 × 13.0 × 18.0	B32592C6474+***	2320	3120	1000
		0.68	10.0 × 16.0 × 18.0	B32592C6684+***	2020	2800	1000
630	200	0.033 ▽	6.5 × 10.5 × 18.0	B32592C8333+***	3320	4400	4000
		0.047 ▽	7.0 × 12.0 × 18.0	B32592C8473+***	3120	4000	2000
		0.068 ▽	7.5 × 14.0 × 18.0	B32592C8683+***	3120	3720	2000
		0.10 ▽	8.5 × 15.0 × 18.0	B32592C8104+***	2560	3320	2000

▽ Wound capacitor technology

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%

\*\*\* = Packaging code:

289 = Ammo pack

189 = Reel

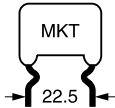
010 = Untaped (lead length 6 – 1 mm)

011 = Untaped (lead length min. 20 mm)

008 = Untaped straight (lead length 17±3 mm)

Packaging codes for further lead configurations (untaped):

Lead configuration (lead length 6 – 1 mm)	Reduced	Reduced	Reduced	Enlarged
Lead spacing (mm)	7.5	10	12.5	17.5
Packaging code	030	040	050	060


**Ordering codes and packing units (lead spacing 22.5 mm)**

$V_R$	$V_{RMS}$ $f \leq 60$ Hz	$C_R$	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./MOQ	Reel pcs./ MOQ	Untaped pcs./ MOQ
V DC	V AC	$\mu F$					
100	63	1.5	7.0 × 14.0 × 26.5	B32593C1155+***	2000	2800	2000
		2.2	8.5 × 15.0 × 26.5	B32593C1225+***	1800	2400	2000
		3.3	10.0 × 16.5 × 26.5	B32593C1335+***	1520	2160	800
		4.7	11.5 × 18.5 × 26.5	B32593C1475+***	1200	1800	800
		6.8	13.0 × 21.5 × 26.5	B32593C1685+***	1120	1520	800
250	160	0.68	7.0 × 13.0 × 26.5	B32593C3684+***	2000	2800	2000
		1.0	7.0 × 15.5 × 26.5	B32593C3105+***	2000	2800	2000
		1.5	8.5 × 17.0 × 26.5	B32593C3155+***	1600	2320	800
		2.2	10.0 × 18.5 × 26.5	B32593C3225+***	1400	2000	800
400	200	0.22	6.5 × 13.0 × 26.5	B32593C6224+***	2020	3200	2000
		0.33	7.0 × 14.0 × 26.5	B32593C6334+***	2020	3200	2000
		0.47	7.0 × 16.5 × 26.5	B32593C6474+***	2000	2800	2000
630	200	0.10	7.0 × 14.0 × 26.5	B32593C8104+***	2000	2800	2000
		0.15	7.5 × 16.0 × 26.5	B32593C8154+***	1800	2600	1000
		0.22	8.5 × 17.0 × 26.5	B32593C8224+***	1600	2320	1000

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%

\*\*\* = Packaging code:

289 = Ammo pack

189 = Reel

010 = Untaped (lead length 6 – 1 mm)

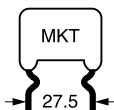
011 = Untaped (lead length min. 20 mm)

008 = Untaped straight (lead length 17±3 mm)

Packaging codes for further lead configurations (untaped):

Lead configuration (lead length 6 – 1 mm)	Reduced	Reduced	Enlarged
Lead spacing (mm)	17.5	20	25
Packaging code	060	070	080




**B32594**
**General purpose (wound)**
**Ordering codes and packing units (lead spacing 27.5 mm)**

$V_R$	$V_{RMS}$ $f \leq 60$ Hz	$C_R$	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Untaped pcs./MOQ
V DC	V AC	$\mu F$			
100	63	4.7	10.5 × 18.5 × 31.5	B32594C1475+***	800
		6.8	12.5 × 21.0 × 31.5	B32594C1685+***	800
		10	17.0 × 22.0 × 31.5	B32594C1106+***	800
250	160	1.5	8.5 × 16.0 × 31.5	B32594C3155+***	2000
		2.2	10.0 × 17.5 × 31.5	B32594C3225+***	2000
		3.3	12.0 × 19.5 × 31.5	B32594C3335+***	800
		4.7	14.0 × 21.5 × 31.5	B32594C3475+***	800
		6.8	15.0 × 25.0 × 31.5	B32594C3685+***	800
400	200	0.68	8.0 × 16.0 × 31.5	B32594C6684+***	1000
		1.0	9.5 × 18.0 × 31.5	B32594C6105+***	1000
		1.5	11.5 × 20.0 × 31.5	B32594C6155+***	1000
		2.2	13.5 × 22.0 × 31.5	B32594C6225+***	800
630	220	0.33	8.0 × 15.0 × 31.5	B32594C8334+***	1000
		0.47	10.0 × 16.0 × 31.5	B32594C8474+***	800
		0.68	10.5 × 18.0 × 31.5	B32594C8684+***	800

MOQ = Minimum Order Quantity, consisting of 4 packing units.

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

J = ±5%

\*\*\* = Packaging code:

010 = Untaped (lead length 6 – 1 mm)

011 = Untaped (lead length min. 20 mm)

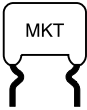
008 = Untaped straight (lead length 17±3 mm)

Packing codes for further lead configurations (untaped):

Lead configuration (lead length 6 – 1 mm)	Reduced
Lead spacing (mm)	25
Packing code	090

**Technical data**

Operating temperature range	Max. operating temperature $T_{op,max}$			+125 °C
	Upper category temperature $T_{max}$			+100 °C
	Lower category temperature $T_{min}$			-55 °C
	Rated temperature $T_R$			+85 °C
Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)	at	$C_R \leq 0.1 \mu F$	$0.1 \mu F < C_R \leq 1 \mu F$	$C_R > 1 \mu F$
	1 kHz	8	10	10
	10 kHz	15	20	—
	100 kHz	30	—	—
Insulation resistance $R_{ins}$ or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity $\leq 65\%$ (minimum as-delivered values)	$V_R$	$C_R \leq 0.33 \mu F$		$C_R > 0.33 \mu F$
	100 V DC $\geq 250$ V DC	3750 M $\Omega$ 7500 M $\Omega$		1250 s 2500 s
DC test voltage	1.4 · $V_R$ , 2 s			
Category voltage $V_C$ (continuous operation with $V_{DC}$ or $V_{AC}$ at $f \leq 60$ Hz)	$T_A$ (°C)	DC voltage derating		AC voltage derating
	$T_A \leq 85$ $85 < T_A \leq 100$	$V_C = V_R$ $V_C = V_R \cdot (165 - T_A)/80$		$V_{C,RMS} = V_{RMS}$ $V_{C,RMS} = V_{RMS} \cdot (165 - T_A)/80$
Operating voltage $V_{op}$ for short operating periods ( $V_{DC}$ or $V_{AC}$ at $f \leq 60$ Hz)	$T_A$ (°C)	DC voltage (max. hours)		AC voltage (max. hours)
	$T_A \leq 100$ $100 < T_A \leq 125$	$V_{op} = 1.25 \cdot V_C$ (2000 h) $V_{op} = 1.25 \cdot V_C$ (1000 h)		$V_{op} = 1.0 \cdot V_{C,RMS}$ (2000 h) $V_{op} = 1.0 \cdot V_{C,RMS}$ (1000 h)
Damp heat test Limit values after damp heat test	56 days/40 °C/93% relative humidity			
	Capacitance change $ \Delta C/C $			$\leq 5\%$
	Dissipation factor change $\Delta \tan \delta$			$\leq 5 \cdot 10^{-3}$ (at 10 kHz)
	Insulation resistance $R_{ins}$ or time constant $\tau = C_R \cdot R_{ins}$			$\geq 50\%$ of minimum as-delivered values
Reliability: Failure rate $\lambda$ Service life $t_{SL}$	1 fit ( $\leq 1 \cdot 10^{-9}/h$ ) at $0.5 \cdot V_R$ , 40 °C 200 000 h at $1.0 \cdot V_R$ , 85 °C For conversion to other operating conditions and temperatures, refer to chapter "Quality, 2 Reliability".			
Failure criteria: Total failure Failure due to variation of parameters	Short circuit or open circuit			
	Capacitance change $ \Delta C/C $			$> 10\%$
	Dissipation factor $\tan \delta$			$> 2 \cdot$ upper limit value
	Insulation resistance $R_{ins}$ or time constant $\tau = C_R \cdot R_{ins}$			$< 150$ M $\Omega$ ( $C_R \leq 0.33 \mu F$ ) $< 50$ s ( $C_R > 0.33 \mu F$ )



B32591 ... B32594

General purpose (stacked/wound)

### Pulse handling capability

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/ $\mu$ s.

"k<sub>0</sub>" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V<sup>2</sup>/ $\mu$ s.

Note:

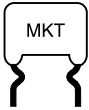
The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.

### dV/dt values

Lead spacing		10 mm		15 mm		22.5 mm	27.5 mm
Technology		Stacked	Wound	Stacked	Wound	Wound	Wound
V <sub>R</sub> V DC	V <sub>RMS</sub> V AC	dV/dt in V/ $\mu$ s					
100	63	75	–	50	–	2.5	2
250	160	150	–	100	–	4	3
400	200	175	–	125	–	7	5
630	200	–	20	–	15	10	–
630	220	–	–	–	–	–	8

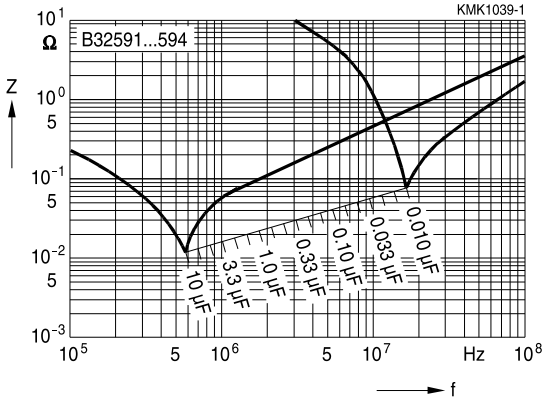
### k<sub>0</sub> values

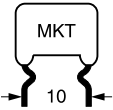
Lead spacing		10 mm		15 mm		22.5 mm	27.5 mm
Technology		Stacked	Wound	Stacked	Wound	Wound	Wound
V <sub>R</sub> V DC	V <sub>RMS</sub> V AC	k <sub>0</sub> in V <sup>2</sup> / $\mu$ s					
100	63	15 000	–	10 000	–	500	400
250	160	75 000	–	50 000	–	2 000	1 500
400	200	140 000	–	100 000	–	5 600	4 000
630	200	–	25 000	–	19 000	12 600	–
630	220	–	–	–	–	–	10 000



**Impedance Z versus frequency f**

(typical values)





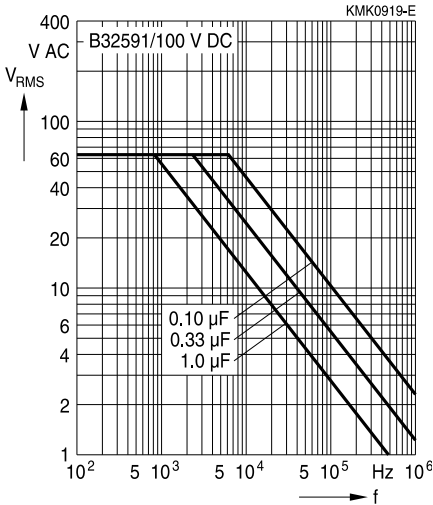
**B32591**

**General purpose (stacked/wound)**

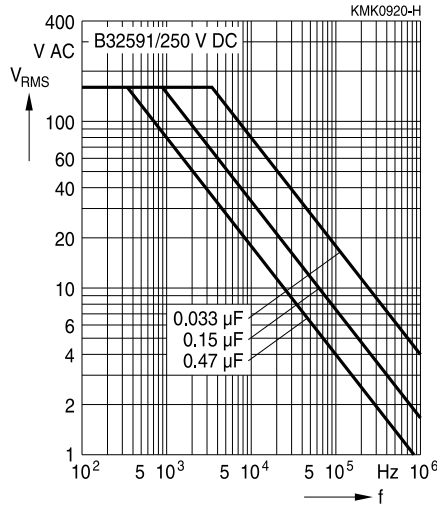
**Permissible AC voltage  $V_{RMS}$  versus frequency  $f$  (for sinusoidal waveforms,  $T_A \leq 55^\circ C$ )**  
 For  $T_A > 55^\circ C$ , please refer to "General technical information", section 3.2.3.

**Lead spacing 10 mm**

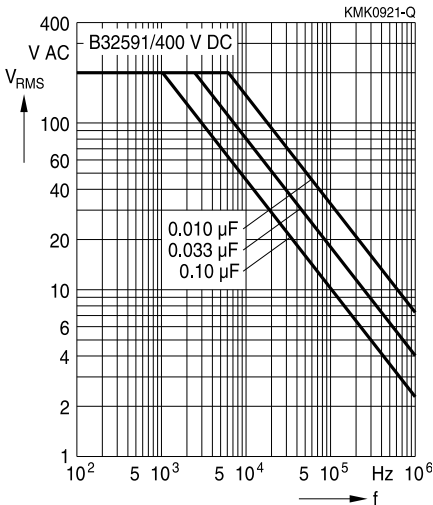
100 V DC/63 V AC



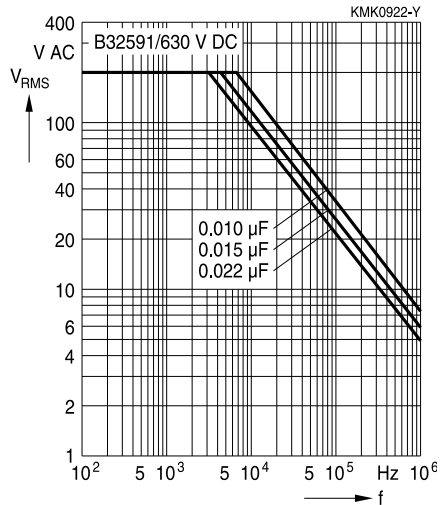
250 V DC/160 V AC

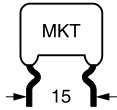


400 V DC/200 V AC



630 V DC/200 V AC

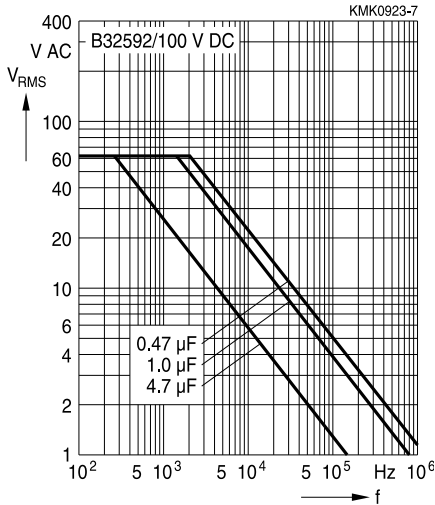




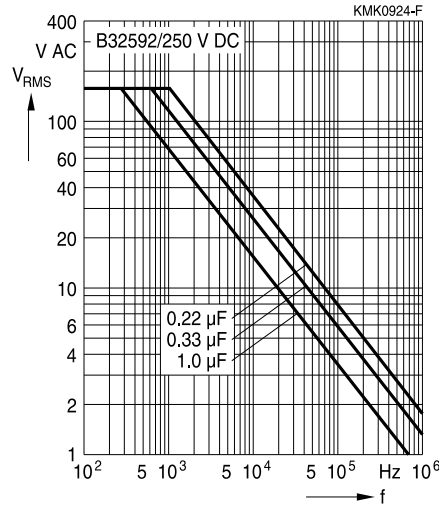
**Permissible AC voltage  $V_{RMS}$  versus frequency  $f$  (for sinusoidal waveforms,  $T_A \leq 55^\circ C$ )**  
 For  $T_A > 55^\circ C$ , please refer to "General technical information", section 3.2.3.

**Lead spacing 15 mm**

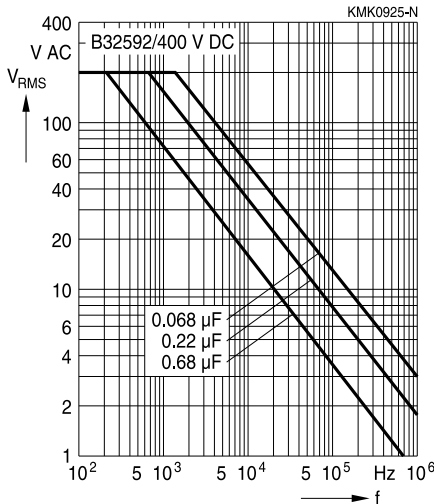
100 V DC/63 V AC



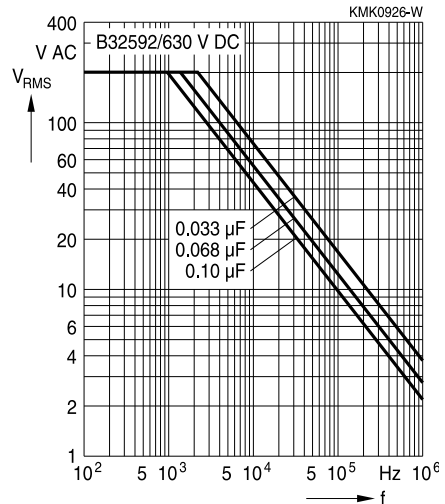
250 V DC/160 V AC

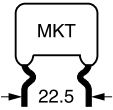


400 V DC/200 V AC



630 V DC/200 V AC





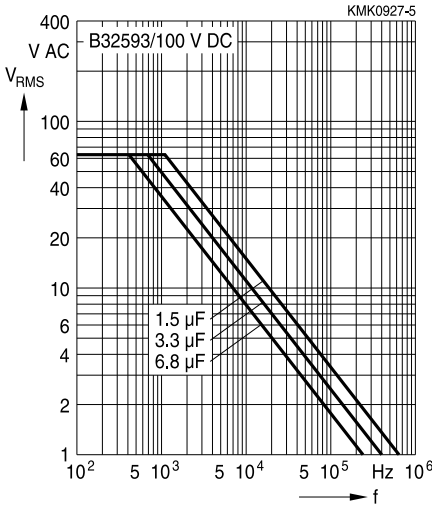
**B32593**

**General purpose (wound)**

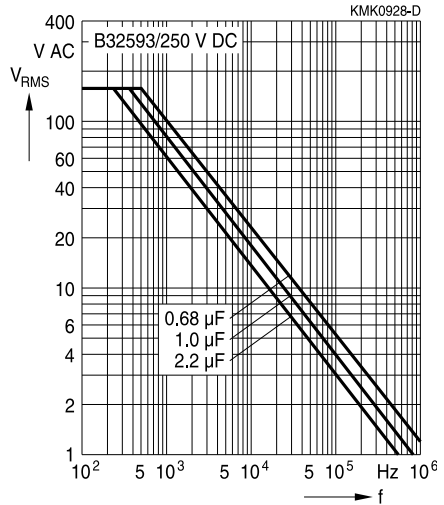
**Permissible AC voltage  $V_{RMS}$  versus frequency  $f$  (for sinusoidal waveforms,  $T_A \leq 55^\circ C$ )**  
 For  $T_A > 55^\circ C$ , please refer to "General technical information", section 3.2.3.

**Lead spacing 22.5 mm**

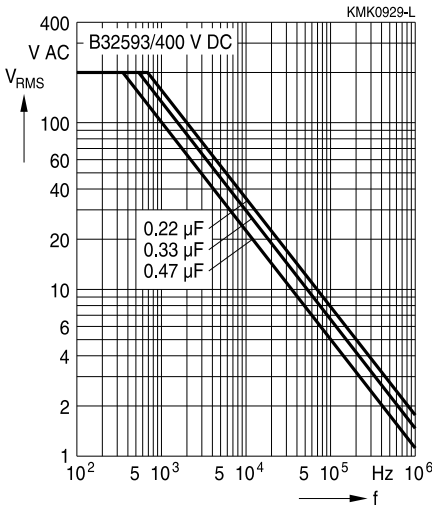
100 V DC/63 V AC



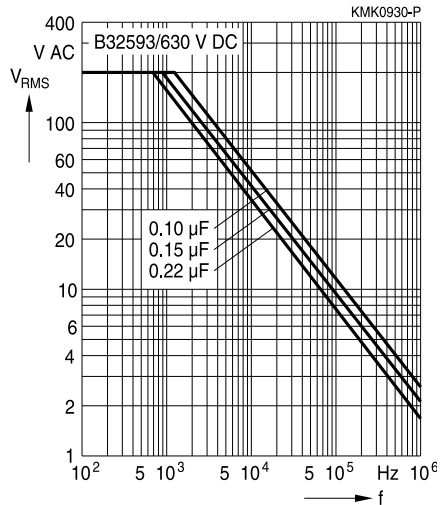
250 V DC/160 V AC

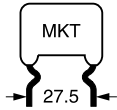


400 V DC/200 V AC



630 V DC/200 V AC

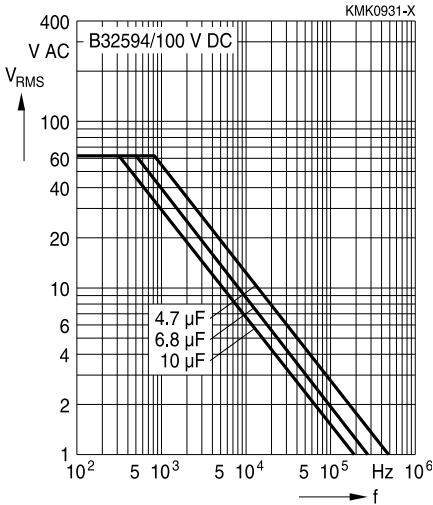




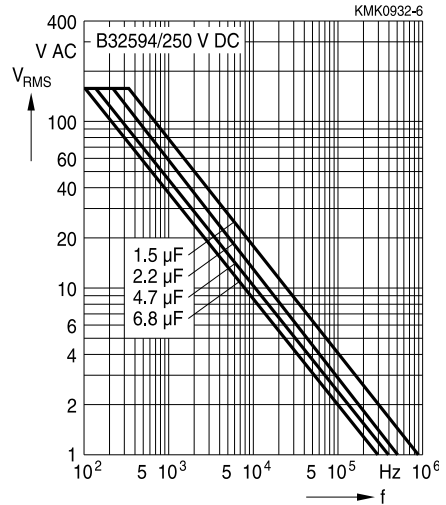
**Permissible AC voltage  $V_{RMS}$  versus frequency  $f$  (for sinusoidal waveforms,  $T_A \leq 55^\circ C$ )**  
 For  $T_A > 55^\circ C$ , please refer to "General technical information", section 3.2.3.

**Lead spacing 27.5 mm**

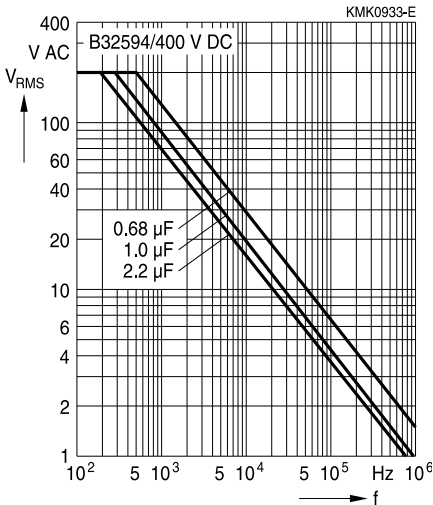
100 V DC/63 V AC



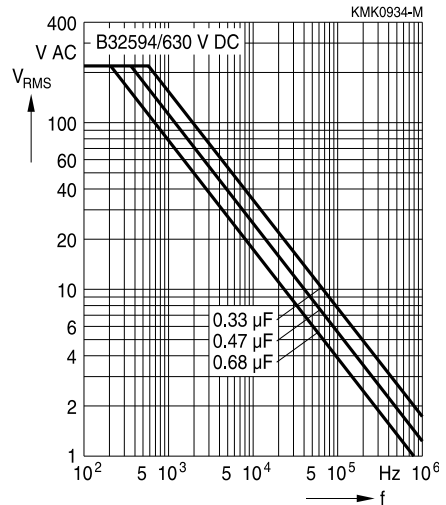
250 V DC/160 V AC



400 V DC/200 V AC



630 V DC/220 V AC






**B32591 ... B32594**
**General purpose (stacked/wound)**

## Mounting guidelines

### 1 Soldering

#### 1.1 Solderability of leads

The solderability of terminal leads is tested to IEC 60068-2-20, test Ta, method 1.

Before a solderability test is carried out, terminals are subjected to accelerated ageing (to IEC 60068-2-2, test Ba: 4 h exposure to dry heat at 155 °C). Since the ageing temperature is far higher than the upper category temperature of the capacitors, the terminal wires should be cut off from the capacitor before the ageing procedure to prevent the solderability being impaired by the products of any capacitor decomposition that might occur.

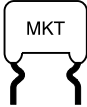
Solder bath temperature	235 ±5 °C
Soldering time	2.0 ±0.5 s
Immersion depth	2.0 +0/-0.5 mm from capacitor body or seating plane
Evaluation criteria:	
Visual inspection	Wetting of wire surface by new solder ≥90%, free-flowing solder

#### 1.2 Resistance to soldering heat

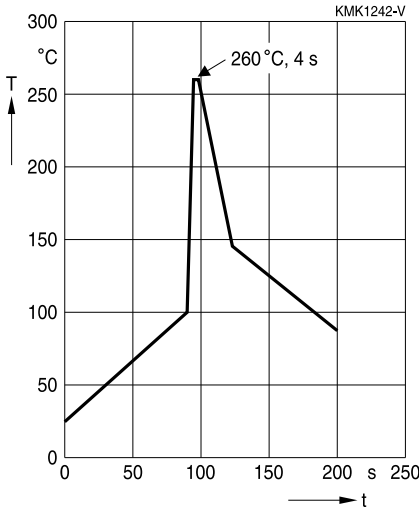
Resistance to soldering heat is tested to IEC 60068-2-20, test Tb, method 1A.

Conditions:

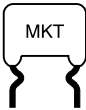
Series	Solder bath temperature	Soldering time
MKT boxed (except 2.5 × 6.5 × 7.2 mm) coated uncoated (lead spacing > 10 mm)	260 ±5 °C	10 ±1 s
MFP MKP (lead spacing > 7.5 mm)		
MKT boxed (case 2.5 × 6.5 × 7.2 mm)		5 ±1 s
MKP (lead spacing ≤ 7.5 mm)		< 4 s
MKT uncoated (lead spacing ≤ 10 mm) insulated (B32559)		recommended soldering profile for MKT uncoated (lead spacing ≤ 10 mm) and insulated (B32559)



General purpose (stacked/wound)



Immersion depth	2.0 +0/−0.5 mm from capacitor body or seating plane
Shield	Heat-absorbing board, (1.5 ±0.5) mm thick, between capacitor body and liquid solder
Evaluation criteria:	
Visual inspection	No visible damage
$\Delta C/C_0$	2% for MKT/MKP/MFP 5% for EMI suppression capacitors
$\tan \delta$	As specified in sectional specification



### 1.3 General notes on soldering

Permissible heat exposure loads on film capacitors are primarily characterized by the upper category temperature  $T_{max}$ . Long exposure to temperatures above this type-related temperature limit can lead to changes in the plastic dielectric and thus change irreversibly a capacitor's electrical characteristics. For short exposures (as in practical soldering processes) the heat load (and thus the possible effects on a capacitor) will also depend on other factors like:

- Pre-heating temperature and time
- Forced cooling immediately after soldering
- Terminal characteristics:  
diameter, length, thermal resistance, special configurations (e.g. crimping)
- Height of capacitor above solder bath
- Shadowing by neighboring components
- Additional heating due to heat dissipation by neighboring components
- Use of solder-resist coatings

The overheating associated with some of these factors can usually be reduced by suitable countermeasures. For example, if a pre-heating step cannot be avoided, an additional or reinforced cooling process may possibly have to be included.

EPCOS recommends the following conditions:

- Pre-heating with a maximum temperature of 110 °C
- Temperature inside the capacitor should not exceed the following limits:
  - MKP/MFP 110 °C
  - MKT 160 °C
- When SMD components are used together with leaded ones, the leaded film capacitors should not pass into the SMD adhesive curing oven. The leaded components should be assembled after the SMD curing step.
- Leaded film capacitors are not suitable for reflow soldering.

#### Uncoated capacitors

For uncoated MKT capacitors with lead spacings  $\leq 10$  mm (B32560/B32561) the following measures are recommended:

- pre-heating to not more than 110 °C in the preheater phase
- rapid cooling after soldering

## 2 Cleaning

To determine whether the following solvents, often used to remove flux residues and other substances, are suitable for the capacitors described, refer to the table below:

Type	Ethanol, isopropanol, n-propanol	n-propanol-water mixtures, water with surface tension-reducing tensides (neutral)	Solvent from table A (see next page)	Solvent from table B (see next page)
MKT (uncoated)	Suitable	Unsuitable	In part suitable	Unsuitable
MKT, MKP, MFP (coated/boxed)		Suitable	Suitable	

Even when suitable solvents are used, a reversible change of the electrical characteristics may occur in uncoated capacitors immediately after they are washed. Thus it is always recommended to dry the components (e.g. 4 h at 70 °C) before they are subjected to subsequent electrical testing.

**Table A**

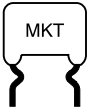
Manufacturers' designations for trifluoro-trichloro-ethane-based cleaning solvents (selection)

Trifluoro-trichloro-ethane	Mixtures of trifluoro-trichloro-ethane with ethanol and isopropanol	Manufacturer
Freon TF	Freon TE 35; Freon TP 35; Freon TES	Du Pont
Frigen 113 TR	Frigen 113 TR-E; Frigen 113 TR-P; Frigen TR-E 35	Hoechst
Arklone P	Arklone A; Arklone L; Arklone K	ICI
Kaltron 113 MDR	Kaltron 113 MDA; Kaltron 113 MDI; Kaltron 113 MDI 35	Kali-Chemie
Flugene 113	Flugene 113 E; Flugene 113 IPA	Rhone-Progil

**Table B (worldwide banned substances)**

Manufacturers' designations for unsuitable cleaning solvents (selection)

Mixtures of chlorinated hydrocarbons and ketones with fluorated hydrocarbons	Manufacturer
Freon TMC; Freon TA; Freon TC	Du Pont
Arklone E	ICI
Kaltron 113 MDD; Kaltron 113 MDK	Kali-Chemie
Flugene 113 CM	Rhone-Progil



B32591 ... B32594

General purpose (stacked/wound)

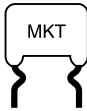
### 3 Embedding of capacitors in finished assemblies

In many applications, finished circuit assemblies are embedded in plastic resins. In this case, both chemical and thermal influences of the embedding ("potting") and curing processes must be taken into account.

Our experience has shown that the following potting materials can be recommended: non-flexible epoxy resins with acid-anhydride hardeners; chemically inert, non-conducting fillers; maximum curing temperature of 100 °C.

**Caution:**

Consult us first if you wish to embed uncoated types!

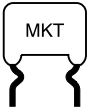


### Cautions and warnings

- Do not exceed the upper category temperature (UCT).
- Do not apply any mechanical stress to the capacitor terminals.
- Avoid any compressive, tensile or flexural stress.
- Do not move the capacitor after it has been soldered to the PC board.
- Do not pick up the PC board by the soldered capacitor.
- Do not place the capacitor on a PC board whose PTH hole spacing differs from the specified lead spacing.
- Do not exceed the specified time or temperature limits during soldering.
- Avoid external energy inputs, such as fire or electricity.
- Avoid overload of the capacitors.

The table below summarizes the safety instructions that must always be observed. A detailed description can be found in the relevant sections of the chapters "General technical information" and "Mounting guidelines".

Topic	Safety information	Reference chapter "General technical information"
Storage conditions	Make sure that capacitors are stored within the specified range of time, temperature and humidity conditions.	4.5 "Storage conditions"
Flammability	Avoid external energy, such as fire or electricity (passive flammability), avoid overload of the capacitors (active flammability) and consider the flammability of materials.	5.3 "Flammability"
Resistance to vibration	Do not exceed the tested ability to withstand vibration. The capacitors are tested to IEC 60068-2-6. EPCOS offers film capacitors specially designed for operation under more severe vibration regimes such as those found in automotive applications. Consult our catalog "Film Capacitors for Automotive Electronics".	5.2 "Resistance to vibration"



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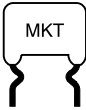
**General purpose (stacked/wound)**

Topic	Safety information	Reference chapter "Mounting guidelines"
Soldering	Do not exceed the specified time or temperature limits during soldering.	1 "Soldering"
Cleaning	Use only suitable solvents for cleaning capacitors.	2 "Cleaning"
Embedding of capacitors in finished assemblies	When embedding finished circuit assemblies in plastic resins, chemical and thermal influences must be taken into account. Caution: Consult us first, if you also wish to embed other uncoated component types!	3 "Embedding of capacitors in finished assemblies"

**Symbols and terms**

Symbol	English	German
$\alpha$	Heat transfer coefficient	Wärmeübergangszahl
$\alpha_C$	Temperature coefficient of capacitance	Temperaturkoeffizient der Kapazität
A	Capacitor surface area	Kondensatoroberfläche
$\beta_C$	Humidity coefficient of capacitance	Feuchtekoeffizient der Kapazität
C	Capacitance	Kapazität
$C_R$	Rated capacitance	Nennkapazität
$\Delta C$	Absolute capacitance change	Absolute Kapazitätsänderung
$\Delta C/C$	Relative capacitance change (relative deviation of actual value)	Relative Kapazitätsänderung (relative Abweichung vom Ist-Wert)
$\Delta C/C_R$	Capacitance tolerance (relative deviation from rated capacitance)	Kapazitätstoleranz (relative Abweichung vom Nennwert)
dt	Time differential	Differentielle Zeit
$\Delta t$	Time interval	Zeitintervall
$\Delta T$	Absolute temperature change (self-heating)	Absolute Temperaturänderung (Selbsterwärmung)
$\Delta \tan \delta$	Absolute change of dissipation factor	Absolute Änderung des Verlustfaktors
$\Delta V$	Absolute voltage change	Absolute Spannungsänderung
dV/dt	Time differential of voltage function (rate of voltage rise)	Differentielle Spannungsänderung (Spannungsflankensteilheit)
$\Delta V/\Delta t$	Voltage change per time interval	Spannungsänderung pro Zeitintervall
E	Activation energy for diffusion	Aktivierungsenergie zur Diffusion
ESL	Self-inductance	Eigeninduktivität
ESR	Equivalent series resistance	Ersatz-Serienwiderstand
f	Frequency	Frequenz
$f_1$	Frequency limit for reducing permissible AC voltage due to thermal limits	Grenzfrequenz für thermisch bedingte Reduzierung der zulässigen Wechselspannung
$f_2$	Frequency limit for reducing permissible AC voltage due to current limit	Grenzfrequenz für strombedingte Reduzierung der zulässigen Wechselspannung
$f_r$	Resonant frequency	Resonanzfrequenz
$F_D$	Thermal acceleration factor for diffusion	Therm. Beschleunigungsfaktor zur Diffusion
$F_T$	Derating factor	Deratingfaktor
i	Current (peak)	Stromspitze
$I_C$	Category current (max. continuous current)	Kategoriestrom (max. Dauerstrom)





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General purpose (stacked/wound)

Symbol	English	German
$I_{RMS}$	(Sinusoidal) alternating current, root-mean-square value	(Sinusförmiger) Wechselstrom
$i_z$	Capacitance drift	Inkonstanz der Kapazität
$k_0$	Pulse characteristic	Impuls Kennwert
$L_S$	Series inductance	Serieninduktivität
$\lambda$	Failure rate	Ausfallrate
$\lambda_0$	Constant failure rate during useful service life	Konstante Ausfallrate in der Nutzungsphase
$\lambda_{test}$	Failure rate, determined by tests	Experimentell ermittelte Ausfallrate
$P_{diss}$	Dissipated power	Abgegebene Verlustleistung
$P_{gen}$	Generated power	Erzeugte Verlustleistung
$Q$	Heat energy	Wärmeenergie
$\rho$	Density of water vapor in air	Dichte von Wasserdampf in Luft
$R$	Universal molar constant for gases	Allg. Molarkonstante für Gas
$R$	Ohmic resistance of discharge circuit	Ohmscher Widerstand des Entladekreises
$R_i$	Internal resistance	Innenwiderstand
$R_{ins}$	Insulation resistance	Isolationswiderstand
$R_P$	Parallel resistance	Parallelwiderstand
$R_S$	Series resistance	Serienwiderstand
$S$	severity (humidity test)	Schärfegrad (Feuchtetest)
$t$	Time	Zeit
$T$	Temperature	Temperatur
$\tau$	Time constant	Zeitkonstante
$\tan \delta$	Dissipation factor	Verlustfaktor
$\tan \delta_D$	Dielectric component of dissipation factor	Dielektrischer Anteil des Verlustfaktors
$\tan \delta_P$	Parallel component of dissipation factor	Parallelanteil des Verlustfaktors
$\tan \delta_S$	Series component of dissipation factor	Serienanteil des Verlustfaktors
$T_A$	Ambient temperature	Umgebungstemperatur
$T_{max}$	Upper category temperature	Obere Kategorietemperatur
$T_{min}$	Lower category temperature	Untere Kategorietemperatur
$t_{OL}$	Operating life at operating temperature and voltage	Betriebszeit bei Betriebstemperatur und -spannung
$T_{op}$	Operating temperature	Betriebstemperatur
$T_R$	Rated temperature	Nenntemperatur
$T_{ref}$	Reference temperature	Referenztemperatur
$t_{SL}$	Reference service life	Referenz-Lebensdauer
$V_{AC}$	AC voltage	Wechselspannung

Symbol	English	German
$V_C$	Category voltage	Kategoriespannung
$V_{C,RMS}$	Category AC voltage	(Sinusförmige) Kategorie-Wechselspannung
$V_{CD}$	Corona-discharge onset voltage	Teilentlade-Einsatzspannung
$V_{ch}$	Charging voltage	Ladespannung
$V_{DC}$	DC voltage	Gleichspannung
$V_{FB}$	Fly-back capacitor voltage	Spannung (Flyback)
$V_i$	Input voltage	Eingangsspannung
$V_o$	Output voltage	Ausgangssspannung
$V_{op}$	Operating voltage	Betriebsspannung
$V_p$	Peak pulse voltage	Impuls-Spitzenspannung
$V_{pp}$	Peak-to-peak voltage Impedance	Spannungshub
$V_R$	Rated voltage	Nennspannung
$\hat{V}_R$	Amplitude of rated AC voltage	Amplitude der Nenn-Wechselspannung
$V_{RMS}$	(Sinusoidal) alternating voltage, root-mean-square value	(Sinusförmige) Wechselspannung
$V_{SC}$	S-correction voltage	Spannung bei Anwendung "S-correction"
$V_{sn}$	Snubber capacitor voltage	Spannung bei Anwendung "Beschaltung"
$Z$	Impedance	Scheinwiderstand
$e$	Lead spacing	Rastermaß

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