MCR1906-1 thru MCR1906-8

REVERSE BLOCKING TRIODE THYRISTORS1.6 AMPERES RMS 25 thru 400 VOLTSThese devices are glassivated planar construction designed for applications in control systems and sensing circuits where low-level gating and holding characteristics are necessary. • Low-Level Gate Characteristics - $I_{GT} = 1.0 \text{ mA} (Max) \oplus T_{C} = 25^{\circ}C$ • Low Holding Current - $I_{H} = 5.0 \text{ mA} (Max) \oplus T_{C} = 25^{\circ}C$ • Glass-to-Metal Bond for Maximum Hermetic Seal MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 100°C unless otherwise noted.) MAXIMUM RATINGS (T _J = 40 to +110°C) MAXIMUM RATINGS (T _J = 40 to +10°C) MAXIMUM RATINGS (T _J = 40 to +10°C) MAXIMUM RATINGS (T _J = 40 to +10°C) MAXIMUM RATINGS (T _J = 40 to		~~~о К	· · · · · · · · · · · · · · · · · · ·		SILICON CONTROLLED RECTIFIERS
applications in control systems and sensing circuits where low-level gating and holding characteristics are necessary. • Low-Level Gate Characteristics - $I_{GT} = 1.0 \text{ mA} (Max) \oplus T_{C} = 25^{\circ}C$ • Low Holding Current - $I_{H} = 5.0 \text{ mA} (Max) \oplus T_{C} = 25^{\circ}C$ • Glass-to-Metal Bond for Maximum Hermetic Seal MAXIMUM RATINGS (T_J = 100°C unless otherwise noted.) Repetitive Peak Reverse Blocking Voltage MCR1906.1 VRM 25 Volts MCR1906.2 100 MCR1906.3 100 MCR1906.5 100 MCR1906.5 100 MCR1906.6 4000 MCR1906.6 4000 MCR1906.6 100 MCR1906.7 500 MCR1906.7 500 MCR1906.7 500 MCR1906.7 500 MCR1906.7 500 MCR1906.7 500 MCR1906.8 100 MCR1906.8 10	REVERSE BLOCKING T				
$I_{CT} = 1.0 \text{ mA } (Max) \oplus T_{C} = 25^{\circ}C$ • Low Holding Current - I_{H} = 5.0 \text{ mA } (Max) \oplus T_{C} = 25^{\circ}C • Glass-to-Metal Bond for Maximum Hermetic Seal $\frac{MAXIMUM \text{ RATINGS } (T_{J} = 100^{\circ}C \text{ unless otherwise noted.})}{\frac{Rating}{Rapetitive Peak Reverse Blocking Voltage} & V_{RRM} & 25 & Volts \\ MCR1906.2 & MCR1906.2 & MCR1906.4 & 250 & Volts \\ MCR1906.4 & 250 & 000 & MCR1906.4 & 000 & MCR1906.5 & 300 & MCR1906.6 & 400 & MCR1906.6 & 400 & MCR1906.6 & 400 & MCR1906.7 & 500 & MCR1906.7 & 500 & MCR1906.6 & 400 & MCR1906.6 & 400 & MCR1906.6 & 400 & MCR1906.6 & 400 & MCR1906.6 & MCR1906.6 & MCR1906.6 & MCR1906.7 & 500 & MCR1906.6 & MCR1906.6 & MCR1906.6 & MCR1906.6 & MCR1906.6 & MCR1906.7 & 500 & MCR1906.7 & MCR1906.7 & MCR1906.7 & MCR1906.7 & MC$	applications in control systems and	sensing circu			
• Glass-to-Metal Bond for Maximum Hermetic Seal $\frac{MAXIMUM RATINGS (T_J = 100^{\circ}C unless otherwise noted.)}{Rating} = \frac{VR1906-1}{VRRM} \frac{Value}{25} Volts$ Repetitive Peak Reverse Blocking Voltage MCR1906-2 150 MCR1906-3 100 MCR1906-5 3000 MCR1906-5 5000 MCR1906-6 4000 MCR1906-6 4000 MCR1906-7 5000 MCR1906-7 5000 MCR1906-7 5000 MCR1906-7 5000 MCR1906-8 600 MCR1906-7 5000 RCR1906-7 5000 RCR1906-7 1TSM 1.6 Amp Preceded and followed by rated current and voltage eak Gate Power PGF (AV) 0.01 Watt read Current and voltage eak Gate Power PGF (AV) 0.01 Watt eak Gate Power PGF (AV) 0.01 Watt eak Gate Voltage T_J -65 to +110 °C preseded and followed by rated current and voltage T_J -65 to +110 °C reade Voltage T_J -65 to +100 °C Reade Voltage T_J -60 °C Reade Voltage T_J -60 °C Reade Voltage T_J -60 °C Reade Voltage T_J -60		9°C			
• Glass-to-Metal Bond for Maximum Hermetic Seal $\frac{MAXIMUM RATINGS (T_J = 100^{\circ}C unless otherwise noted.)}{Rating Voltage VGRM 025 Volts MCR1906.1 VRRM 25 Volts MCR1906.2 50 MCR1906.2 50 MCR1906.5 3000 MCR1906.5 3000 MCR1906.5 4000 MCR1906.5 4000 MCR1906.5 6000 MCR1906.5 60000 MCR19000 MCR1906.5 60000 MCR19000 MCR19$	 Low Holding Current – I_H = 5.0 m 				
RatingSymbolValueUnitRepetitive Peak Reverse Blocking Voltage MCR1906-1 V_{RRM} 25VoltsMCR1906-2 MCR1906-350VoltsMCR1906-3 MCR1906-5100MCR1906-6 MCR1906-6200MCR1906-7 MCR1906-8500MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-81T (RMS)Its On-State Current (All Conduction Angles)ITSIts On-State Current (One Cycle, 60 Hz, TJ = -40 to +110°C)ITSMPreceded and followed by rated current and voltageITSMeak Gate PowerPGM0.1warage Gate PowerPGF(AV)0.01warage Gate PowerPGF(AV)0.01warage Gate VoltageVGM6.0VoltageVGM6.0VoltageTJ-65 to +110Operating Junction Temperature RangeTJ- +230°COperating Solder Temperature +230°C				-	
RatingSymbolValueUnitRepetitive Peak Reverse Blocking Voltage MCR1906-1VRRM25VoltsMCR1906-2 MCR1906-350100MCR1906-4 MCR1906-5200MCR1906-5 MCR1906-6300MCR1906-6 MCR1906-8400MCR1906-7 MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-81T (RMS)1.1.6Amp(All Conduction Angles)1TSPeak Non-Repetitive Surge Current (One Cycle, 60 Hz, T, J = -40 to +110°C)Preceded and followed by rated current and voltage1TSMPeak Gate PowerPGM0.1Verage Gate PowerPGF(AV)0.01Verage Gate PowerPGF(AV)0.01Verage Gate VoltageVGM6.0Operating Junction Temperature RangeT, J-65 to +110°Cktorage Temperature RangeT, J-65 to +150°CMC 40000 0.12860000Colorer to colorer-+230°C					
RatingSymbolValueUnitRepetitive Peak Reverse Blocking Voltage MCR1906-1 V_{RRM} 25VoltsMCR1906-2 MCR1906-350VoltsMCR1906-3 MCR1906-5100MCR1906-6 MCR1906-6200MCR1906-7 MCR1906-8500MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-8600MCR1906-81T (RMS)Its On-State Current (All Conduction Angles)ITSIts On-State Current (One Cycle, 60 Hz, TJ = -40 to +110°C)ITSMPreceded and followed by rated current and voltageITSMeak Gate PowerPGM0.1warage Gate PowerPGF(AV)0.01warage Gate PowerPGF(AV)0.01warage Gate VoltageVGM6.0VoltageVGM6.0VoltageTJ-65 to +110Operating Junction Temperature RangeTJ- +230°COperating Solder Temperature +230°C					
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MCR1906-7 MCR1906-8500 600RMS On-State Current (All Conduction Angles)IT(RMS)1.6AmpPeak Non-Repetitive Surge Current (One Cycle, 60 Hz, T J = -40 to + 110°C) Preceded and followed by rated current and voltageITSM15AmpPeak Gate PowerPGM0.1WattPeak Gate PowerPGF(AV)0.01WattPeak Gate CurrentIGM0.1AmpPeak Gate VoltageVGM6.0VoltPorating Junction Temperature RangeT J-65 to +110°CStorage Temperature RangeT stg-65 to +150°CMate Solder Temperature-+230°CMate Solder Temperature-+230°C	MAXIMUM RATINGS (T _J = 100° C unless oth	erwise noted.)			
IMS On State Current (All Conduction Angles)IT(RMS)I.6AmpPeak Non-Repetitive Surge Current (One Cycle, 60 Hz, T $J = -40$ to $\pm 110^{\circ}$ C)ITSM15AmpPreceded and followed by rated current and voltageITSM15AmpPeak Gate PowerPGM0.1WattPeak Gate PowerPGF(AV)0.01WattPeak Gate CurrentIGM0.1AmpPeak Gate VoltageVGM6.0VoltPreceded and followed by rated current and voltageIGM0.1Pak Gate VoltageVGM6.0VoltPeak Gate VoltageT J-65 to ±110°CC4330.300.210H0.210H0.220Corrage Temperature RangeT J-65 to ±150°CM45° NOM45° NOM45° NOMPeak Solder Temperature-±230°CPeak Solder Temperature-±230°CPeak Solder Temperature RangeT J-65 to ±150°CM45° NOM45° NOM90° NOM	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5	Symbol	Value 25 50 100 200 300		$\begin{array}{c c} L \\ F \\ SEATING \\ PLANE \\ \hline \\ $
Peak Non-Repetitive Surge Current (One Cycle, 60 Hz, Tj = -40 to $\pm 110^{\circ}$ C)ITSM15A mpPreceded and followed by rated current and voltageITSM15A mpPeak Gate PowerPGM0.1WattVerage Gate PowerPGF(AV)0.01WattVerage Gate PowerIGM0.1AmpVerage Gate VoltageVGM6.0VoltPerting Junction Temperature RangeTj-65 to +110°CMarket Temperature RangeTstg-65 to +150°CMarket Temperature-+230°CMarket Temperature0.050Out Temperature-+230°CMarket Temperature0.050Out Temperature-+230°COut Temperature0.050Out Temperature-+230°COut Temperature- <td>Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7</br></br></td> <td>Symbol</td> <td>Value 25 50 100 200 300 400 500</td> <td></td> <td>$\begin{array}{c c} LE \\ SEATING \\ PLANE \\ \end{array}$</td>	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 	Symbol	Value 25 50 100 200 300 400 500		$\begin{array}{c c} LE \\ SEATING \\ PLANE \\ \end{array}$
Peak Gate Power PGM 0.1 Wait Average Gate Power PGF(AV) 0.01 Watt Peak Gate Current IGM 0.1 Amp Peak Gate Voltage VGM 6.0 Volt Perating Junction Temperature Range TJ -65 to +110 °C Storage Temperature Range Tstg -65 to +150 °C Lead Solder Temperature - +230 °C M 45° NOM Quit Solder Temperature - +230 °C M 90 % NOM 90 % NOM	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-6 MCR1906-8 RMS On-State Current	Symbol VRRM	Value 25 50 100 200 300 400 500 600	Volts	
Variage Gate Fower $r_{GF(AV)}$ 0.01 Watt 0 0.406 0.533 0.016 0.021 reak Gate Current IGM 0.1 Amp E 0.229 3.18 0.009 0.125 reak Gate Voltage VGM 6.0 Volt H 0.71 0.886 0.021 Deperating Junction Temperature Range T_J -65 to +110 °C °C K 12.70 - 0.000 - torage Temperature Range T_stg -65 to +150 °C M 45° NOM 45° NOM 45° NOM ead Solder Temperature - +230 °C M 90° NOM 90° NOM 900° NOM	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 RMS On-State Current (All Conduction Angles) Peak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by	Symbol VRRM	Value 25 50 100 200 300 400 500 600 1.6	Volts	PLANE THE D
F 0.46 0.1 Amp eak Gate Current IGM 0.1 Amp eak Gate Current VGM 6.0 Volt Pperating Junction Temperature Range TJ -65 to +110 °C torage Temperature Range Tstg -65 to +150 °C ead Solder Temperature - +230 °C P 1.27 - 0.050 Q 1.07 90° NOM 45° NOM	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 IMS On-State Current (All Conduction Angles) eak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by rated current and voltage	Symbol VRRM ¹ T(RMS) ¹ TSM	Value 25 50 100 200 300 400 500 600 1.6 15	Volts Amp Amp	PLANE THE D PLANE
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Deperating Junction Temperature Range T_J -65 to +110 $^{\circ}$ C J 0.737 1.02 0.028 0.040 torage Temperature Range T _{stg} -65 to +110 $^{\circ}$ C K 12.70 - 0.500 - tead Solder Temperature - +230 $^{\circ}$ C M 45 ^o NOM 45 ^o NOM P - 1.27 - 0.050 - - 0.050 -	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 RMS On-State Current (All Conduction Angles) eak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by rated current and voltage eak Gate Power werage Gate Power	Symbol VRRM ¹ T(RMS) ¹ TSM PGM PGF(AV)	Value 25 50 100 200 300 400 500 600 1.6 15 15 0.1 0.01	Volts Amp Amp Watt Watt	PLANE
M 450 NOM 450 NOM 450 NOM 450 NOM ead Solder Temperature - +230 °C 0 - 1.27 - 0.050 Q 90° NOM 90° NOM 900 NOM 900 NOM 900 NOM 900 NOM	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 RMS On-State Current (All Conduction Angles) Peak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by rated current and voltage Peak Gate Power Nerage Gate Power Peak Gate Current	Symbol VRRM ¹ T(RMS) ¹ TSM PGF(AV) ¹ GM	Value 25 50 100 200 300 400 500 600 1.6 15 0.1 0.1 0.1	Volts Amp Amp Watt Watt Amp	PLANE
ead Solder Temperature+230 °C <u>P</u>	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 RMS On-State Current (All Conduction Angles) Peak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by rated current and voltage Peak Gate Power Average Gate Power Peak Gate Current Peak Gate Voltage	Symbol VRRM ¹ T(RMS) ¹ TSM PGF(AV) ¹ GM VGM	Value 25 50 100 200 300 400 500 600 1.6 1.5 15 0.1 0.1 0.1 6.0	Volts Amp Amp Watt Watt Amp Volt	PLANE
	Rating Repetitive Peak Reverse Blocking Voltage MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8 RMS On-State Current (All Conduction Angles) Peak Non-Repetitive Surge Current (One Cycle, 60 Hz, TJ = -40 to +110°C) Preceded and followed by rated current and voltage Peak Gate Power Peak Gate Current Peak Gate Voltage Operating Junction Temperature Range	Symbol VRRM ¹ T(RMS) ¹ TSM ^P GF(AV) ¹ GM VGM T _J	Value 25 50 100 200 300 400 500 600 1.6 1.6 15 0.1 0.1 0.1 6.0 -65 to +110	Volts Amp Amp Watt Watt Matt Volt °C	PLANE

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted.)

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Characteristic		Symbol	Min	Тур	Max	Unit
Peak Forward Blocking Voltage (R _{GK} = 1000 Ohms)	MCR1906-1 MCR1906-2 MCR1906-3 MCR1906-4 MCR1906-5 MCR1906-6 MCR1906-7 MCR1906-8	VDRM	25 50 100 200 300 400 500 600			Volt
Peak Forward Blocking Current (Rated V _{DRM} , R _{GK} = 1000 Ohms,)	T _J = 110 ⁰ C)	IDRM	-	-	500	μΑ
Peak Reverse Blocking Current (Rated VRRM, RGK = 1000 Ohms,	Т _Ј ≖ 110 ⁰ С)	IRRM	-	_	500	μA
Peak On-State Voltage (Pulsed, 1.0 ms m (I = 1.0 Adc peak)	nax, Duty Cycle < 1.0%)	VTM	-	-	1.75	Volt
Gate Trigger Current (Continuous dc) (VAK = 7.0 V, RL = 100 ohms)		IGT		-	1.0	mAdc
Gate Trigger Voltage (Continuous dc) (V _{AK} = 7.0 V, R _L = 100 ohms) (V _{AK} = Rated V _{DRM} , R _L = 100 oh T _J = 110 ^o C)	ms, R _{GK} = 1000 Ohms,	VGT	0.1	_ _	1.0	Volt
Holding Current (V _{AK} = 7.0 V, R _{GK} = 1000 ohms)		łн	-	-	5.0	mA
Turn-On Time (IGT = 10 mA, IF = 1.0 A) (IGT = 20 mA, IF = 1.0 A)		tgt	_	0.8 0.6		μs
Turn-Off Time {I _F = 1.0 A, I _R = 1.0 A, dv/dt = 20 V	/μs, T _J = 110 ⁰ C)	tq		10	-	μs

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