

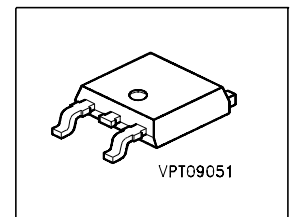
Fast Switching Emitter Controlled Diode

Product Summary

V_{RRM}	600	V
I_F	3	A
V_F	1.5	V
T_{jmax}	175	°C

Feature

- 600V Emitter Controlled technology
- Fast recovery
- Soft switching
- Low reverse recovery charge
- Low forward voltage
- 175°C operating temperature
- Easy paralleling
- Pb-free lead plating; RoHS compliant
- Qualified according to JEDEC⁰⁾ for target applications



Type	Package	Ordering Code	Marking	Pin 1	PIN 2,4	PIN 3
IDD03E60		-	D03E60	NC	C	A

Maximum Ratings, at $T_j = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	600	V
Continuous forward current $T_C = 25\text{ °C}$ $T_C = 90\text{ °C}$	I_F	7.3 4.9	A
Surge non repetitive forward current $T_C = 25\text{ °C}$, $t_p = 10\text{ ms}$, sine halfwave	I_{FSM}	16	A
Maximum repetitive forward current $T_C = 25\text{ °C}$, t_p limited by $t_{j,max}$, $D = 0.5$	I_{FRM}	11	A
Power dissipation $T_C = 25\text{ °C}$ $T_C = 90\text{ °C}$	P_{tot}	23 13.1	W
Operating junction temperature	T_j	-40...+175	°C
Storage temperature	T_{stg}	-55...+150	
Soldering temperature 1.6mm (0.063 in.) from case for 10 s	T_S	260	

Thermal Characteristics

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Thermal resistance, junction - case	R_{thJC}	-	-	6.5	K/W
SMD version, device on PCB:	R_{thJA}				
@ min. footprint		-	-	75	
@ 6 cm ² cooling area ¹⁾		-	-	50	

Electrical Characteristics, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Reverse leakage current	I_R				μA
$V_R=600\text{V}, T_j=25^\circ\text{C}$		-	-	50	
$V_R=600\text{V}, T_j=150^\circ\text{C}$		-	-	250	
Forward voltage drop	V_F				V
$I_F=3\text{A}, T_j=25^\circ\text{C}$		-	1.5	2	
$I_F=3\text{A}, T_j=150^\circ\text{C}$		-	1.5	-	

⁰J-STD20 and JESD22

¹Device on 40mm*40mm*1.5mm epoxy PCB FR4 with 6cm² (one layer, 70 μm thick) copper area for drain connection. PCB is vertical without blown air.

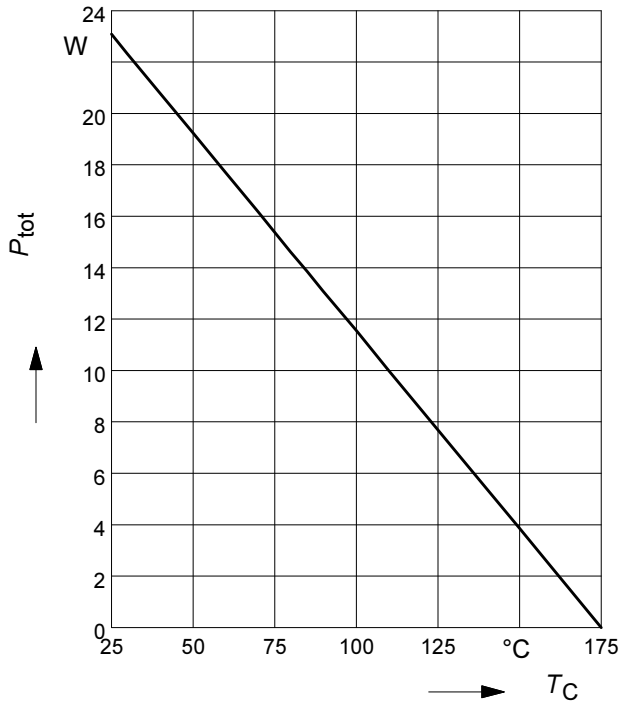
Electrical Characteristics, at $T_j = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Dynamic Characteristics					
Reverse recovery time $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=25\text{°C}$ $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=125\text{°C}$ $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=150\text{°C}$	t_{rr}	-	62 98 103	-	ns
Peak reverse current $V_R=400\text{V}$, $I_F = 3\text{ A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=25\text{°C}$ $V_R=400\text{V}$, $I_F = 3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=125\text{°C}$ $V_R=400\text{V}$, $I_F = 3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=150\text{°C}$	I_{rrm}	-	3.8 4.6 4.7	-	A
Reverse recovery charge $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=25\text{°C}$ $V_R=400\text{V}$, $I_F = 3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=125\text{°C}$ $V_R=400\text{V}$, $I_F = 3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=150\text{°C}$	Q_{rr}	-	118 195 215	-	nC
Reverse recovery softness factor $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=25\text{°C}$ $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=125\text{°C}$ $V_R=400\text{V}$, $I_F=3\text{A}$, $di_F/dt=350\text{A}/\mu\text{s}$, $T_j=150\text{°C}$	S	-	4.1 5.1 5.2	-	

1 Power dissipation

$$P_{tot} = f(T_C)$$

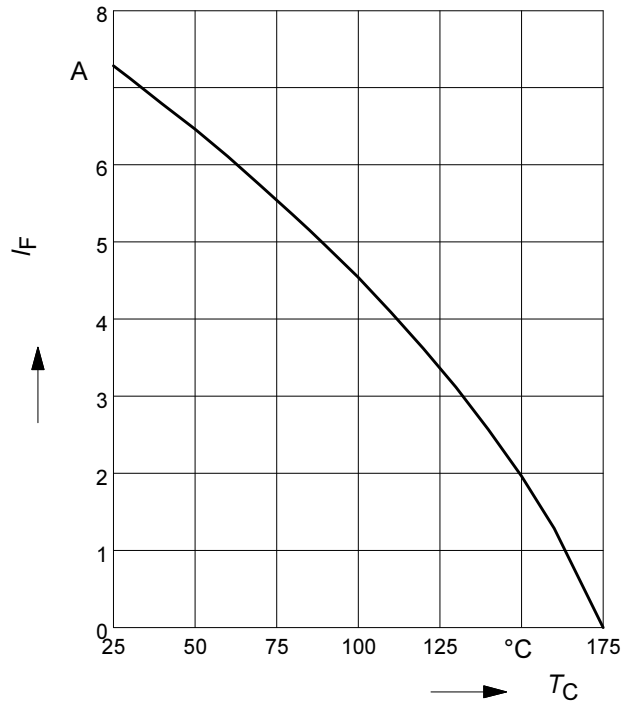
parameter: $T_j \leq 175^\circ\text{C}$



2 Diode forward current

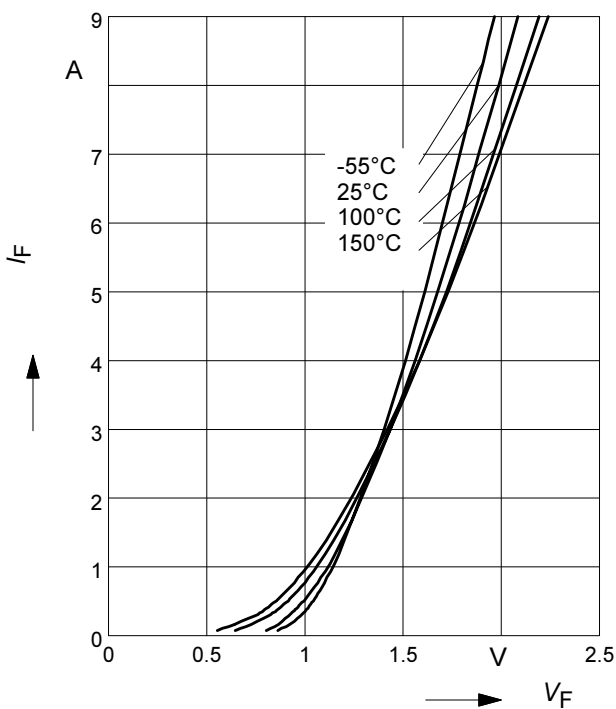
$$I_F = f(T_C)$$

parameter: $T_j \leq 175^\circ\text{C}$



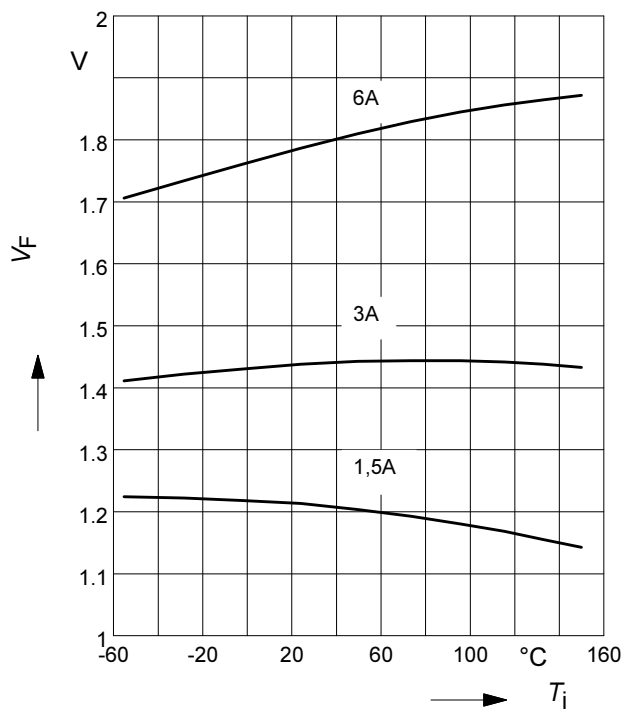
3 Typ. diode forward current

$$I_F = f(V_F)$$



4 Typ. diode forward voltage

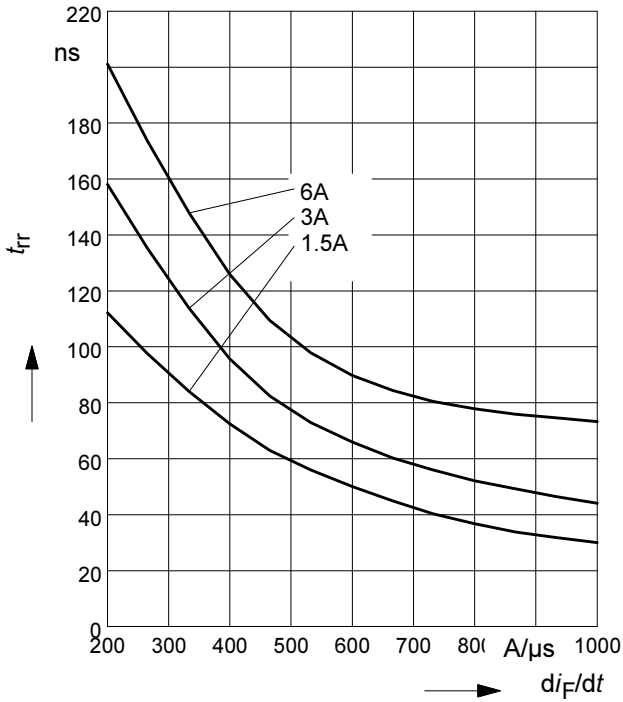
$$V_F = f(T_j)$$



5 Typ. reverse recovery time

$$t_{rr} = f(dI_F/dt)$$

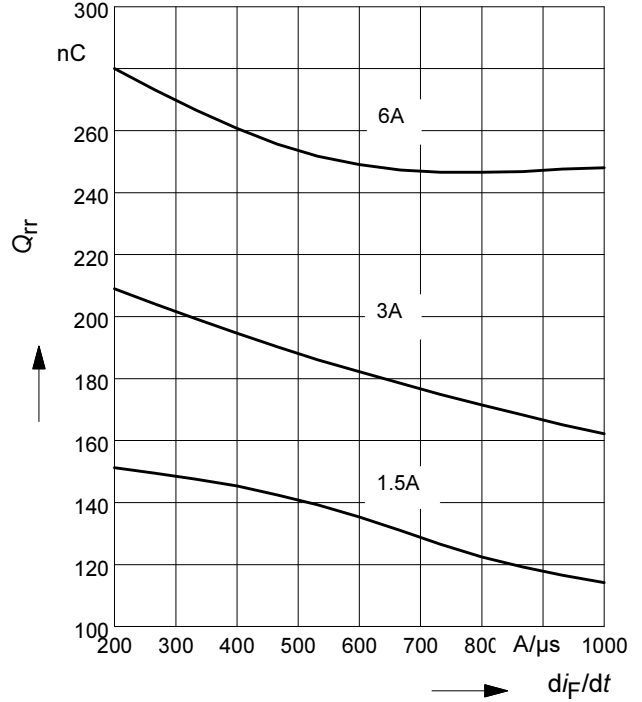
parameter: $V_R = 400V, T_j = 125^\circ C$



6 Typ. reverse recovery charge

$$Q_{rr} = f(dI_F/dt)$$

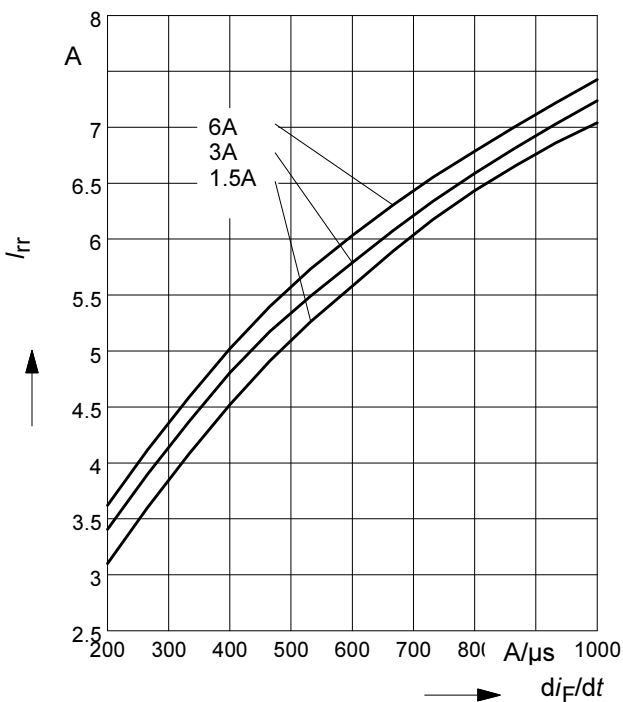
parameter: $V_R = 400V, T_j = 125^\circ C$



7 Typ. reverse recovery current

$$I_{rr} = f(dI_F/dt)$$

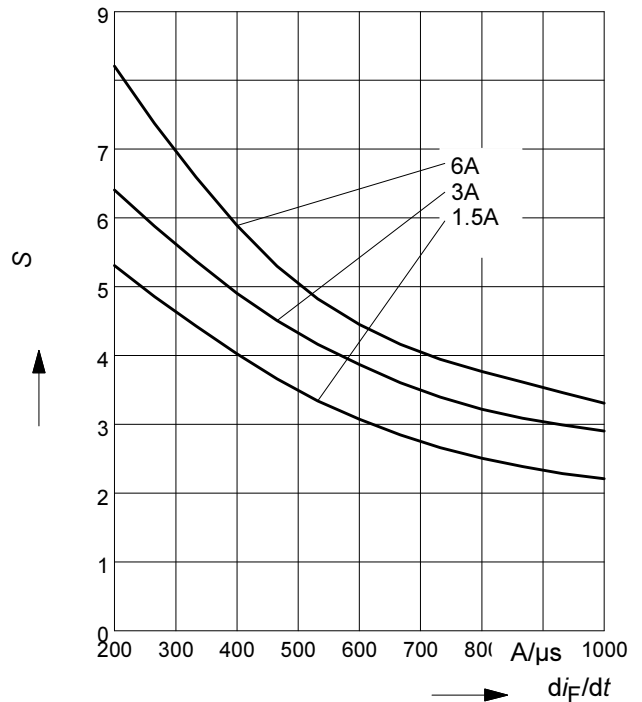
parameter: $V_R = 400V, T_j = 125^\circ C$



8 Typ. reverse recovery softness factor

$$S = f(dI_F/dt)$$

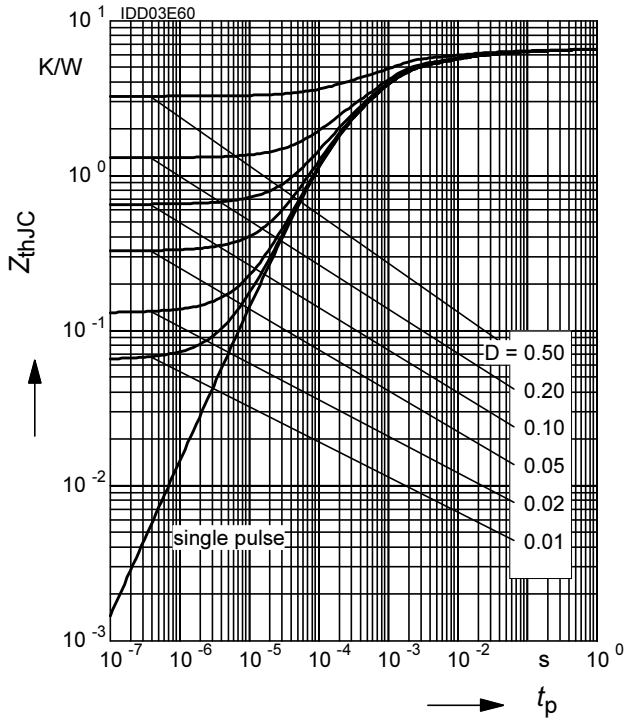
parameter: $V_R = 400V, T_j = 125^\circ C$



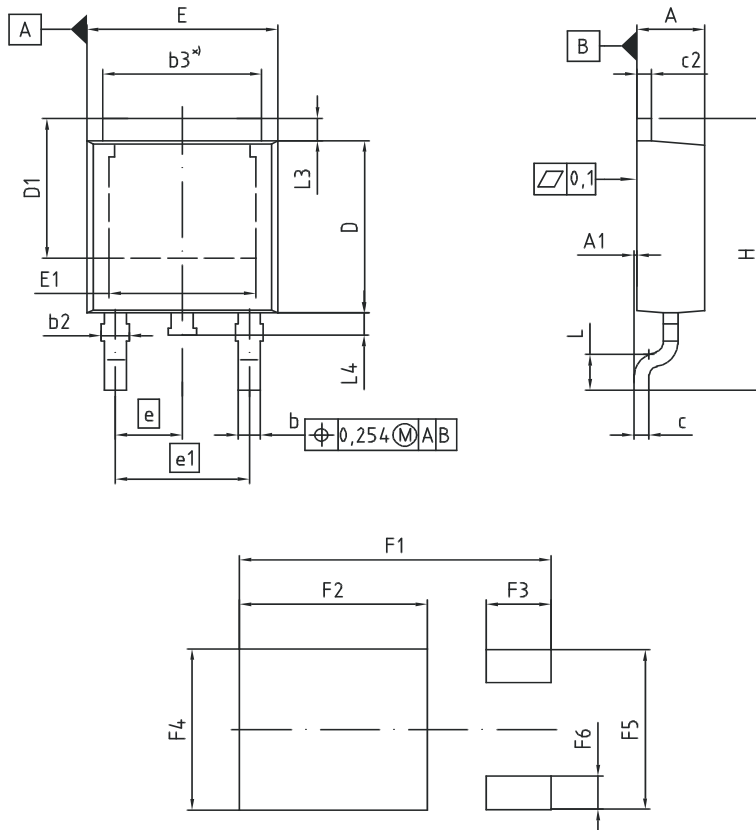
9 Max. transient thermal impedance

$$Z_{thJC} = f(t_p)$$

parameter : $D = t_p/T$



PG-TO252 -3



*) mold flash not included

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.16	2.41	0.085	0.095
A1	0.00	0.15	0.000	0.006
b	0.64	0.89	0.025	0.035
b2	0.65	1.15	0.026	0.045
b3	5.00	5.50	0.197	0.217
c	0.46	0.60	0.018	0.024
c2	0.46	0.98	0.018	0.039
D	5.97	6.22	0.235	0.245
D1	5.02	5.84	0.198	0.230
E	6.40	6.73	0.252	0.265
E1	4.70	5.21	0.185	0.205
e	2.29 (BSC)		0.090 (BSC)	
e1	4.57		0.180	
N	3		3	
H	9.40	10.48	0.370	0.413
L	1.18	1.70	0.046	0.067
L3	0.90	1.25	0.035	0.049
L4	0.51	1.00	0.020	0.039
F1	10.60		0.417	
F2	6.40		0.252	
F3	2.20		0.087	
F4	5.80		0.228	
F5	5.76		0.227	
F6	1.20		0.047	

DOCUMENT NO.
Z8B00003328

SCALE

EUROPEAN PROJECTION

ISSUE DATE
16-02-2011

REVISION
04

Published by
Infineon Technologies AG,
Bereichs Kommunikation
St.-Martin-Strasse 53,
D-81541 München
© Infineon Technologies AG 1999
All Rights Reserved.

Attention please!

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives worldwide (see address list).

Warnings

Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Diodes - General Purpose, Power, Switching category](#):

Click to view products by [Infineon manufacturer](#):

Other Similar products are found below :

[RD0306T-H](#) [BAQ33-GS18](#) [BAV17-TR](#) [BAV19-TR](#) [NTE156A](#) [NTE525](#) [NTE571](#) [NTE574](#) [NTE5804](#) [NTE5806](#) [NTE6244](#) [1SS181-TP](#)
[1SS193,LF](#) [1SS400CST2RA](#) [SDAA13](#) [SHN2D02FUTW1T1G](#) [LS4151GS08](#) [1N4449](#) [1N456A](#) [1N4934-E3/73](#) [1N914B](#) [1N914BTR](#)
[RFUH20TB3S](#) [BAS 28 E6327](#) [BAV199-TP](#) [BAW56DWQ-7-F](#) [BAW75-TAP](#) [MM230L-CAA](#) [IDW40E65D1](#) [LL4151-GS18](#) [053684A](#)
[SMMSD4148T3G](#) [707803H](#) [SP000010217](#) [ACDSW4448-HF](#) [CDSZC01100-HF](#) [BAV199E6433HTMA1](#) [BAV70M3T5G](#) [SMBT2001T1G](#)
[NTE5801](#) [NTE5800](#) [NTE5808](#) [NTE6240](#) [NTE6248](#) [DLM10C-AT1](#) [BAS28-7](#) [BAW56HDW-13](#) [BAS28 TR](#) [VS-HFA04SD60STR-M3](#)
[NSVM1MA152WKT1G](#)