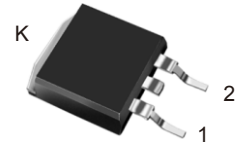


Features

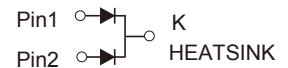
- Power pack
- Metal silicon junction, majority carrier conduction
- Guard ring for over voltage protection
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL Level 1, per J-STD-020, LF Max peak of 245°C
- Component in accordance to RoHS 2011/65/EU



Package: TO-263

Mechanical Data

- Case: JEDEC TO-263
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked



Schematic Diagram

Applications

For use in low voltage, high frequency inverters, DC/DC converters, free wheeling, and polarity protection applications

Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	100	V
Maximum Average Forward Rectified Current (see figure.1)	Per Leg	10.0	A
	Total Device	20.0	
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method at Rated T _L)	I _{FSM}	200	A
Peak Repetitive Reverse Current per Diode at tp=2μs 1KHz	I _{RRM}	0.5	A
Typical Thermal Resistance Junction to Case	R _{θJC}	2.5	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to+150	°C

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Test Conditions	Symbol	Typ.	Max.	Unit	
Instaneous Forward Voltage	Per Leg $I_F=10.0\text{A}$	$T_A=25^\circ\text{C}$	0.80	0.85	V	
		$T_A=100^\circ\text{C}$	0.70	-		
		$T_A=125^\circ\text{C}$	0.66	-		
	Per Leg $I_F=5.0\text{A}$	$T_A=25^\circ\text{C}$	V_F^1	0.53		0.57
		$T_A=100^\circ\text{C}$		0.51		-
		$T_A=125^\circ\text{C}$		0.50		-
Reverse Current	$V_R=100\text{V}$	$T_A=25^\circ\text{C}$	-	20	μA	
		$T_A=100^\circ\text{C}$	-	1	mA	
		$T_A=125^\circ\text{C}$	-	3		
Typical Junction Capacitance	4V, 1MHz	C_J	260		pF	

Notes:

1. Pulse test: 300 μs pulse width, 1% duty cycle
2. Pulse test: pulse width $\leq 40\text{ms}$

Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

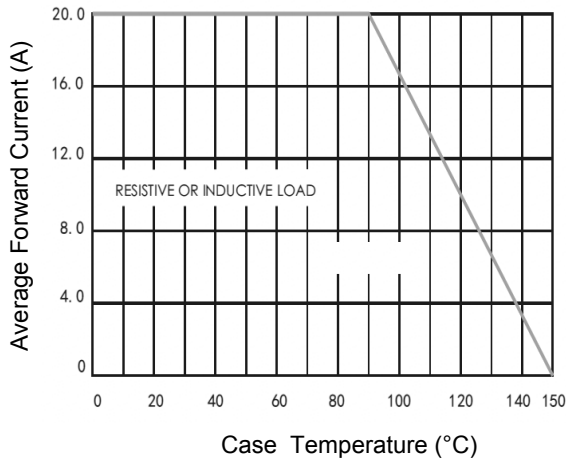


Figure 1. Forward Current Derating Curve

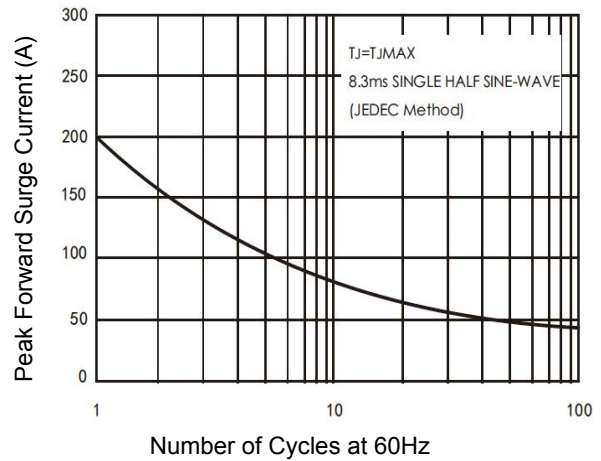


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

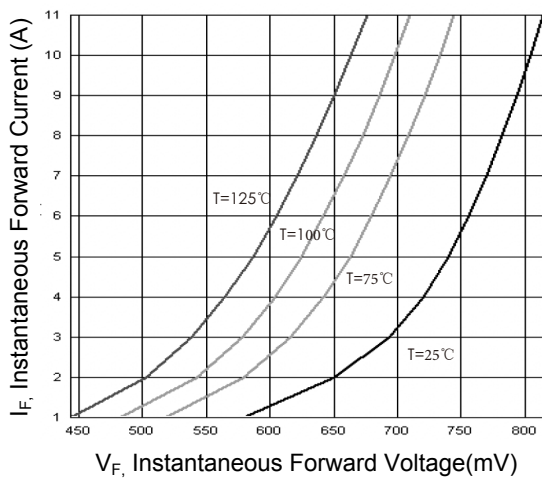


Figure 3. Typical Instantaneous Forward Characteristics

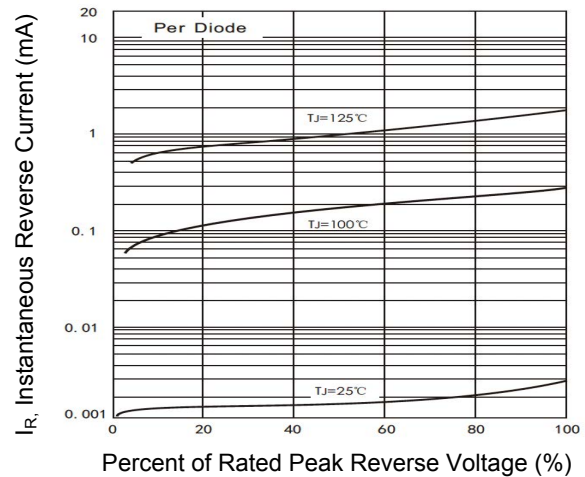


Figure 4. Typical Reverse Characteristics

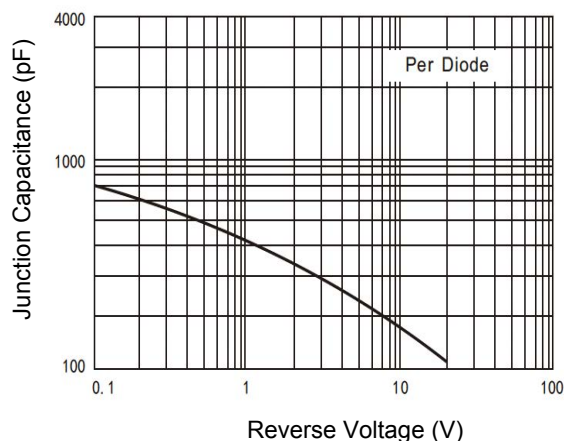
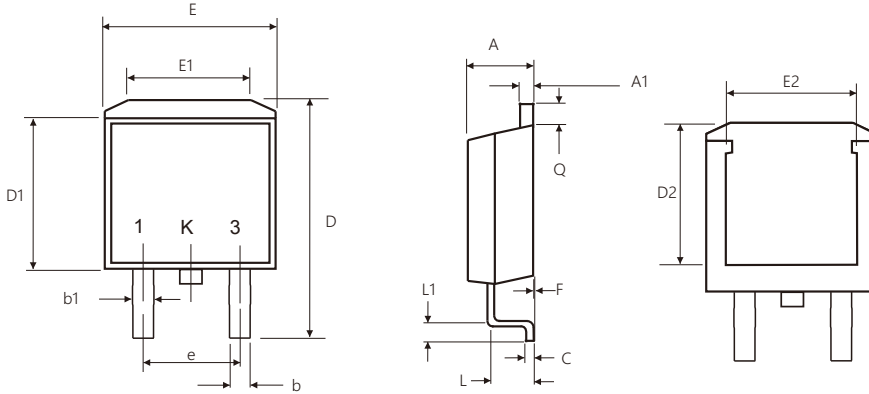


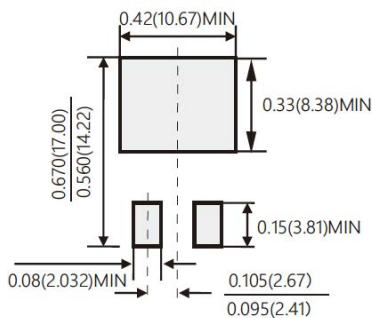
Figure 5. Typical Junction Capacitance

Package Outline Dimensions (TO-263)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	0.160	0.190
A1	1.14	1.40	0.045	0.055
e	4.98	5.18	0.196	0.204
b	0.69	0.94	0.027	0.037
b1	1.20	1.34	0.047	0.053
C	0.35	0.46	0.014	0.018
D	14.22	16.22	0.560	0.639
D1	8.13	9.14	0.320	0.360
E	9.65	10.67	0.380	0.420
E1	6.22	-	0.245	-
L	2.67	3.40	0.105	0.134
L1	2.29	3.32	0.090	0.131
Q	0.92	1.68	0.036	0.066
F	0.02	0.30	0.001	0.012
D2	7.20	7.80	0.283	0.307
E2	7.60	8.20	0.299	0.323

Recommended Pad Layout



Note:

1. Pad dimensions for reference
2. Unit in inches (millimeters)

Order Information

Device	Package	Marking	Carrier	Quantity
GSR20100D1	TO-263	SR20100D1	Tape & Reel	800pcs / Reel