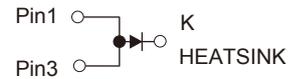


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated chip
- Low VF, low power loss
- Flexible solution for reliable AC power rectification
- High surge capability
- Meets JESD 201 class 2 whisker test
- High temperature soldering guaranteed: 260°C/10s at terminals
- Component in accordance to RoHS 2015/863/EU



TO-263 (D²PAK)



Schematic Diagram

Mechanical Data

- Case: JEDEC TO-263 (D²PAK)
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked

Applications

- Input rectification
- Bypass diode
- Polarity reverse protection
- EV/HEV battery chargers

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

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	1200	V
Maximum Average Forward Rectified Current, D=0.5, T _C =118°C	I _{F(AV)}	35	A
Surge Non Repetitive Forward Current t _p =10ms Sinusoidal	I _{FSM}	435	A
Maximum Operating Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C
Typical Thermal Resistance Junction to Case	R _{θJC}	0.9	°C/W
Typical Thermal Resistance Junction to Ambient ¹	R _{θJA}	62	

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Breakdown Voltage	V_{BR}	$I_R=10\mu\text{A}$	1200	-	-	V	
Blocking Voltage	V_R						
Instaneous Forward Voltage ²	V_F	$T_J=25^\circ\text{C}$	$I_F=5\text{A}$	-	0.87	-	V
			$I_F=25\text{A}$	-	1.02	-	
			$I_F=35\text{A}$	-	1.08	1.20	
		$T_J=150^\circ\text{C}$	$I_F=5\text{A}$	-	0.71	-	
			$I_F=25\text{A}$	-	0.92	-	
			$I_F=35\text{A}$	-	1.00	-	
Reverse Current ³	I_R	$T_J=25^\circ\text{C}$	$V_R=1200\text{V}$	-	-	2.0	μA
		$T_J=125^\circ\text{C}$		-	-	200	μA
		$T_J=150^\circ\text{C}$		-	-	800	
Junction Capacitance	C_J	4V, 1MHz	-	100	-	pF	

Notes:

1. When mounted on 1" square (650mm²) PCB of FR-4
2. Pulse test: 300 μs pulse width, 1% duty cycle
3. Pulse test: pulse width \leq 40ms

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

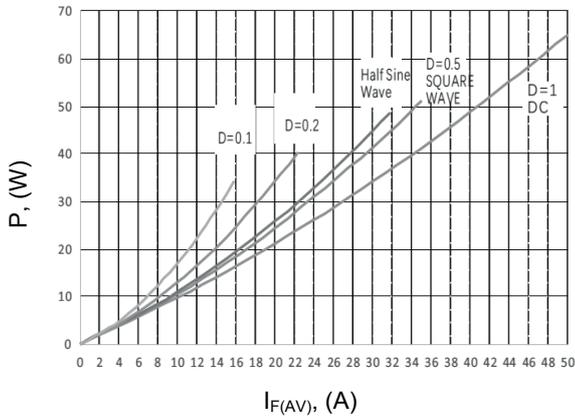


Figure 1. Conduction Losses vs. Average Current

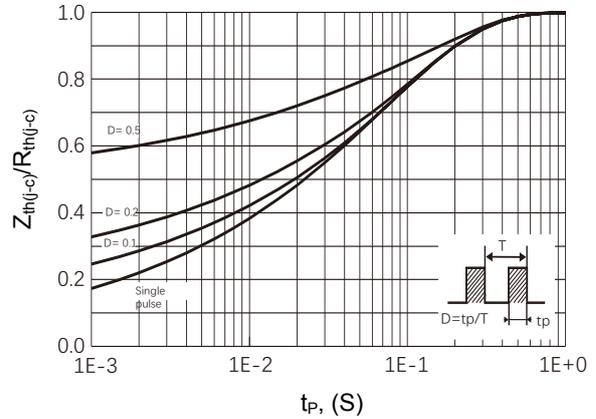


Figure 2. Relative Variation of Thermal Impedance Junction to Case vs. Pulse Duration

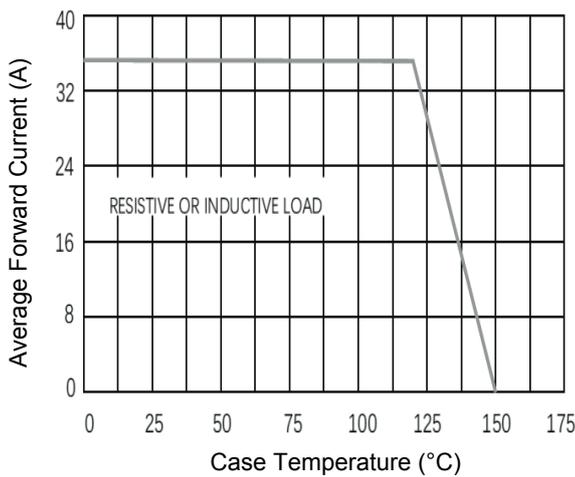


Figure 3. Forward Current Derating Curve

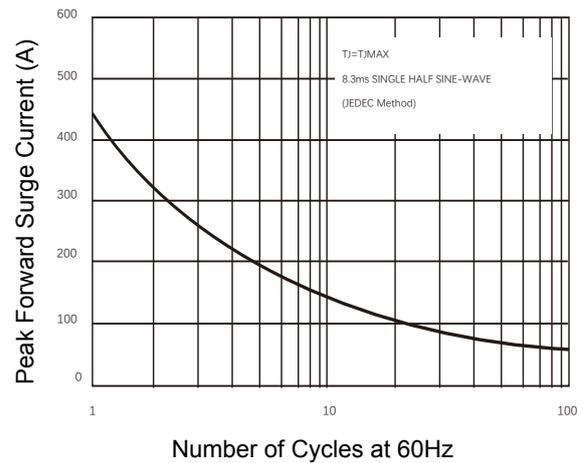


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

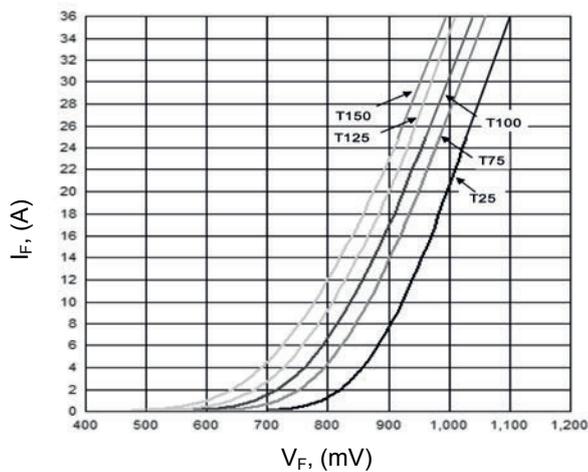


Figure 5. Typical Instantaneous Forward Characteristics

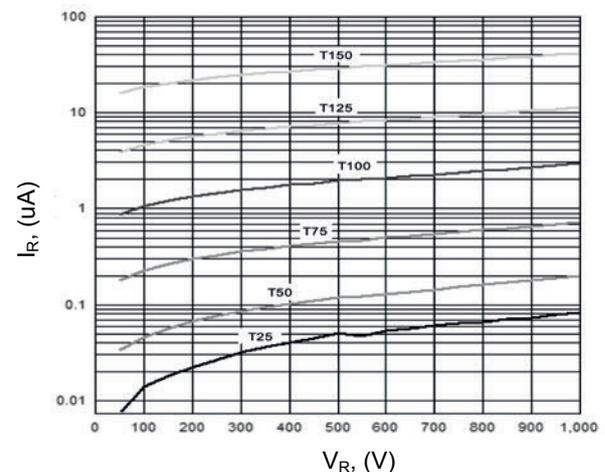


Figure 6. Typical Reverse Characteristics

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

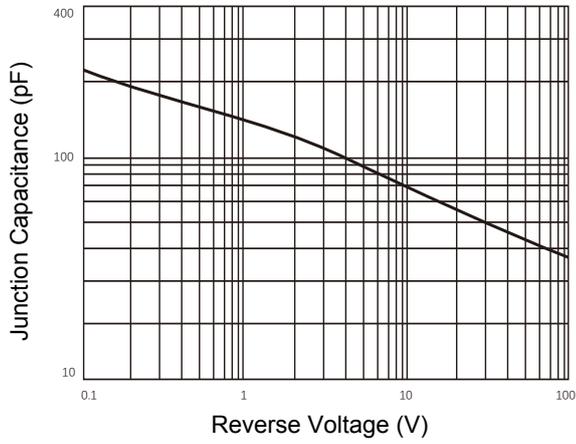
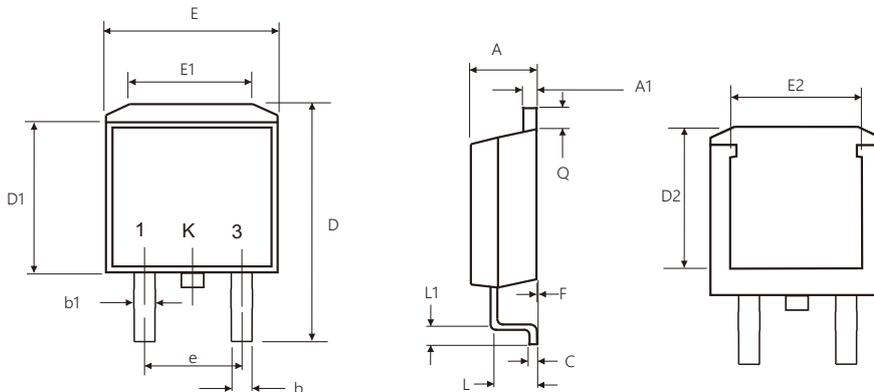


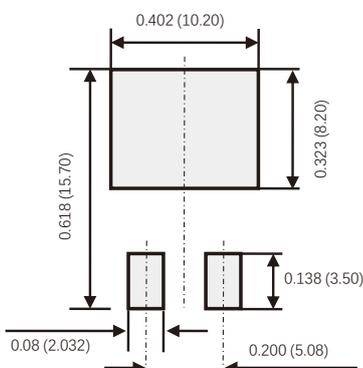
Figure 7. Typical Junction Capacitance

Package Outline Dimensions TO-263 (D²PAK)



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	Packaging	SPQ
GSTD35120D3	TO-263 (D ² PAK)	STD35120D3	Tape & Reel	800 Pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com