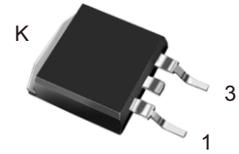
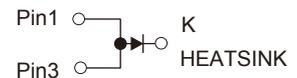


## Features

- 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
- High temperature soldering guaranteed: 260°C/10s at terminals
- Component in accordance to RoHS 2015/863/EU



TO-263 (D<sup>2</sup>PAK)



Schematic Diagram

## 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

## Applications

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

## Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	1600	V
Maximum Average Forward Rectified Current, $D=0.5$ , $T_C=118^\circ\text{C}$ (Fig.1)	$I_{F(AV)}$	35	A
Surge Non Repetitive Forward Current $t_p=10\text{ms}$ Sinusoidal	$I_{FSM}$	435	A
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	0.9	°C/W
Typical Thermal Resistance Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	62	
Maximum Operating Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

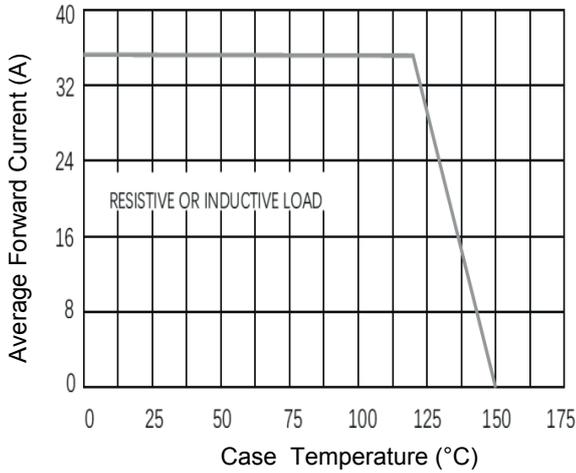
## **Electrical Characteristics** ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Breakdown Voltage	$V_{BR}$	$I_R=10\mu\text{A}$	1600	-	-	V	
Blocking Voltage	$V_R$						
Instaneous Forward Voltage <sup>2</sup>	$V_F$	$T_J=25^\circ\text{C}$	$I_F=5\text{A}$	-	0.87	-	V
			$I_F=25\text{A}$	-	1.06	-	
			$I_F=35\text{A}$	-	1.12	1.25	
		$T_J=150^\circ\text{C}$	$I_F=5\text{A}$	-	0.73	-	
			$I_F=25\text{A}$	-	0.97	-	
			$I_F=35\text{A}$	-	1.06	-	
Reverse Current <sup>3</sup>	$I_R$	$T_J=25^\circ\text{C}$	$V_R=1600\text{V}$	-	-	2.0	$\mu\text{A}$
		$T_J=125^\circ\text{C}$		-	-	200	
		$T_J=150^\circ\text{C}$		-	-	800	
Junction Capacitance	$C_J$	4V, 1MHz	-	78	-	pF	

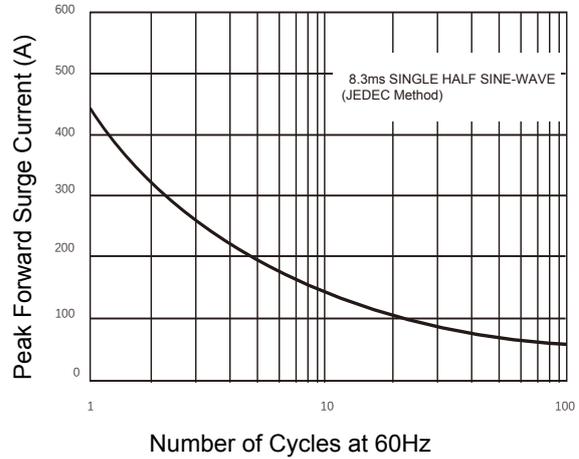
**Notes:**

1. When mounted on 1" square (650mm<sup>2</sup>) PCB of FR-4
2. Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle
3. Pulse test: pulse width  $\leq$  40ms

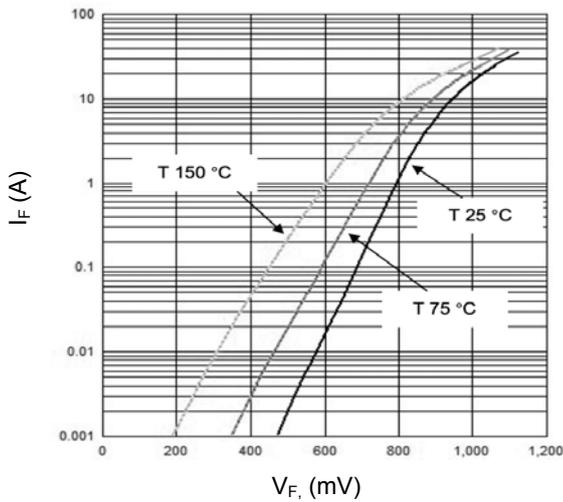
## Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



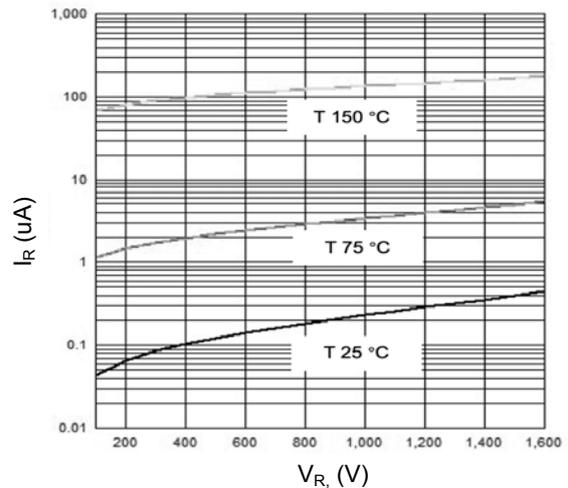
**Figure 1. Forward Current Derating Curve**



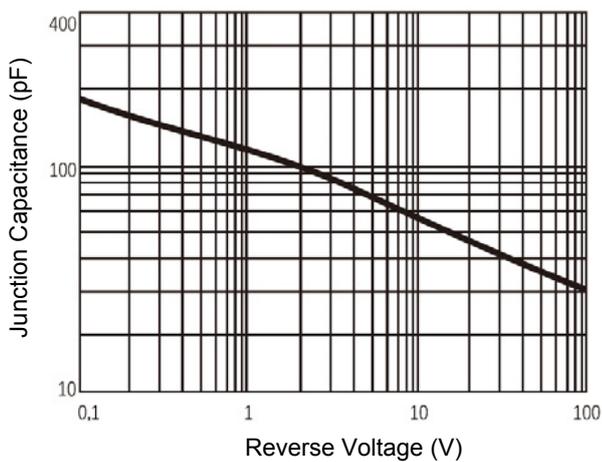
**Figure 2. Maximum Non-Repetitive Peak Forward Surge Current**



**Figure 3. Typical Instantaneous Forward Characteristics**

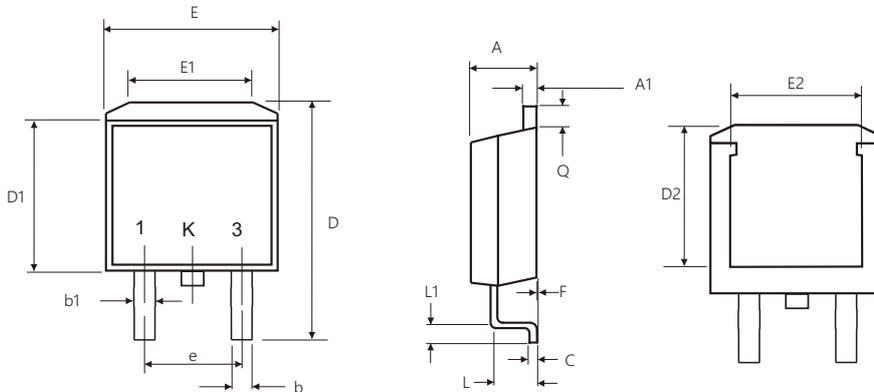


**Figure 4. Typical Reverse Characteristics**



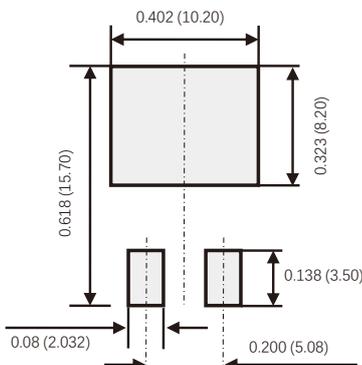
**Figure 5. Typical Junction Capacitance**

## Package Outline Dimensions (TO-263/D<sup>2</sup>PAK)



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**

<b>Device</b>	<b>Package</b>	<b>Marking</b>	<b>Carrier</b>	<b>Quantity</b>
GSTD35160D3	TO-263(D <sup>2</sup> PAK)	STD35160D3	Tape & Reel	800 Pcs / Reel