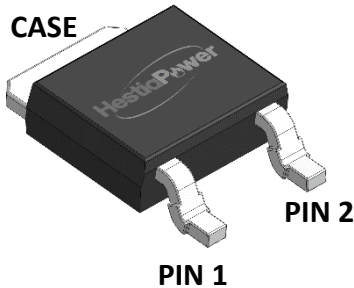
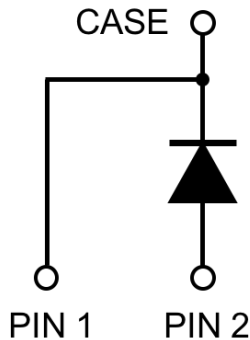


### Package TO-252-2L



### Inner Circuit



### Product Summary

$V_R$	<b>1200 V</b>	
$I_F$	<b>4A</b> ( $T_c=135^\circ\text{C}$ )	<b>2A</b> ( $T_c=165^\circ\text{C}$ )
$Q_C$	<b>11 nC</b>	



### Features

- ◆ Low Conduction and Switching Loss
- ◆ Positive Temperature Coefficient on  $V_F$
- ◆ Temperature Independent Switching Behavior
- ◆ Fast Reverse Recovery
- ◆ High Surge Current Capability
- ◆ Pb-free lead plating
- ◆ AEC-Q101 Qualified

### Benefits

- ◆ Higher System Efficiency
- ◆ Parallel Device Convenience
- ◆ High Temperature Application
- ◆ High Frequency Operation
- ◆ Hard Switching & High Reliability
- ◆ Environmental Protection

### Applications

- ◆ SMPS
- ◆ PFC
- ◆ Solar/ Wind Renewable Energy
- ◆ Power Inverters
- ◆ Motor Drives

### Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	$T_J = 25^\circ\text{C}$	1200	V
Peak Reverse Surge Voltage	$V_{RSM}$	$T_J = 25^\circ\text{C}$	1200	V
DC Blocking Voltage	$V_R$	$T_J = 25^\circ\text{C}$	1200	V
Continuous Forward Current	$I_F$	$T_C = 25^\circ\text{C}$	9	A
		$T_C = 135^\circ\text{C}$	4	A
		$T_C = 165^\circ\text{C}$	2	A

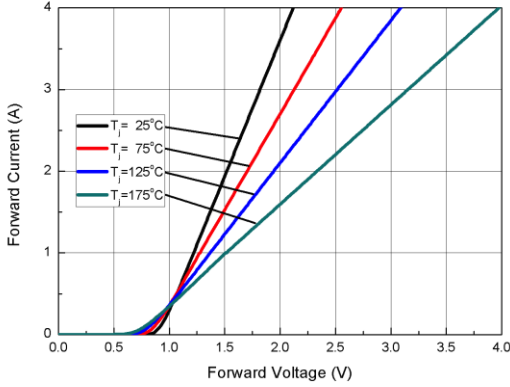
### Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Unit
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	T <sub>C</sub> = 25°C, T <sub>P</sub> = 10 ms Half Sine Wave	27	A
		T <sub>C</sub> = 125°C, T <sub>P</sub> = 10 ms Half Sine Wave	25	A
		T <sub>C</sub> = 25°C, T <sub>P</sub> = 10 μs Pulse	127	A
Repetitive Peak Forward Surge Current	I <sub>FRM</sub>	T <sub>C</sub> = 25°C, T <sub>P</sub> = 10 ms Half Sine Wave, D = 0.1	19	A
		T <sub>C</sub> = 125°C, T <sub>P</sub> = 10 ms Half Sine Wave, D = 0.1	16	A
Power Dissipation	P <sub>D</sub>	T <sub>C</sub> = 25°C	71.5	W
		T <sub>C</sub> = 125°C	24	W
Operating Junction and Storage Temperature	T <sub>J</sub>		175	°C
	T <sub>stg</sub>		-55 to 175	°C
Thermal Resistance Junction to Case	R <sub>θJC</sub>		2.1	°C/W

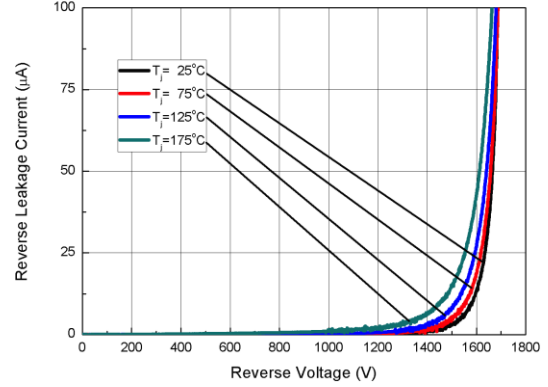
### Electrical Characteristics

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit
DC Blocking Voltage	V <sub>DC</sub>	I <sub>R</sub> = 100 μA, T <sub>J</sub> = 25°C	> 1200		V
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 2A, T <sub>J</sub> = 25°C	1.5	1.8	V
		I <sub>F</sub> = 2A, T <sub>J</sub> = 175°C	2.3	2.6	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 1200V, T <sub>J</sub> = 25°C	< 1	50	μA
		V <sub>R</sub> = 1200V, T <sub>J</sub> = 175°C	2	250	μA
Total Capacitive Charge	Q <sub>C</sub>	I <sub>F</sub> = 2A, dI/dt=300A/μs, V <sub>R</sub> =400V, T <sub>J</sub> =25°C	11		nC
Total Capacitance	C	V <sub>R</sub> =1V, T <sub>J</sub> =25°C, f=1 MHz	126		pF
		V <sub>R</sub> =400V, T <sub>J</sub> =25°C, f=1 MHz	15		
		V <sub>R</sub> =800V, T <sub>J</sub> =25°C, f=1 MHz	13		

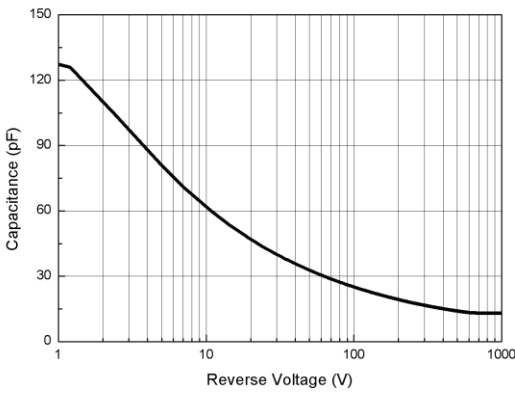
### Device Performances



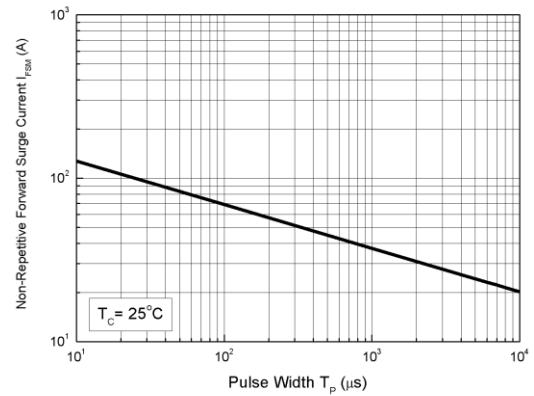
**Fig. 1 Forward Characteristics**



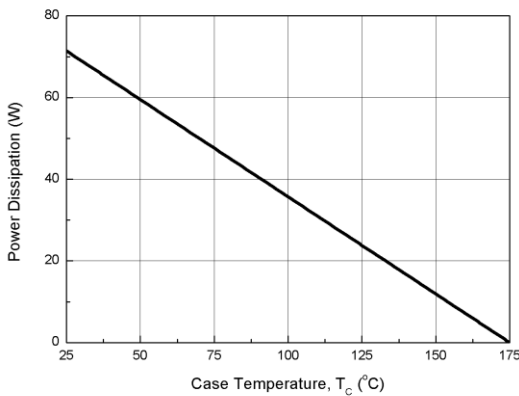
**Fig. 2 Reverse Characteristics**



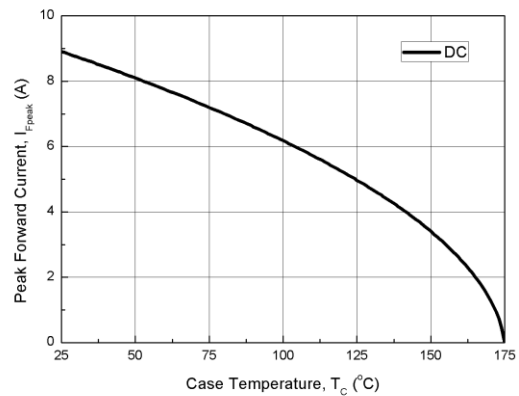
**Fig. 3 Capacitance vs. Reverse Voltage**



**Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)**

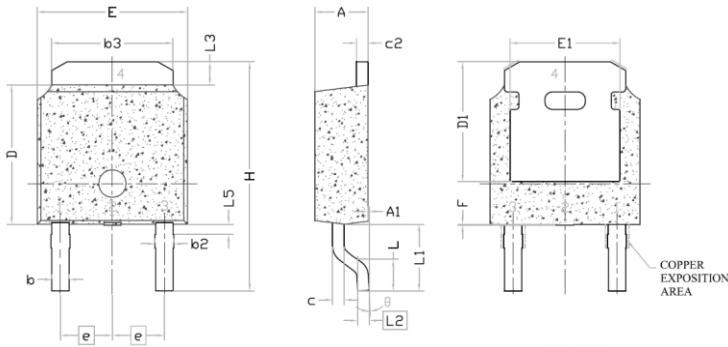


**Fig. 5 Power Derating**



**Fig. 6 Current Derating**

### Package Dimensions TO-252-2L



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L5	--	--	--
D	6.00	6.10	6.223
H	9.40	10.00	10.40
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0	--	0.127
c	0.46	0.50	0.60
c2	0.46	0.50	0.58
D1	5.21	--	--
E1	4.40	--	--
F	--	--	0.45
θ	0°	--	10°

**Note:**

1. All Dimension Are In mm.
2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.
4. The Package Top May Be Smaller Than The Package Bottom.
5. Dimension "b" Does Not Include Dambar Protrusion. Allowable Dambar Protrusion Shall Be 0.10 mm Total In Excess Of "b" Dimension At Maximum Material Condition. The Dambar Cannot Be Located On The Lower Radius Of The Foot.