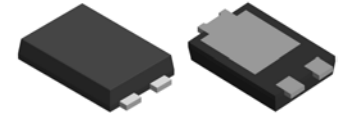
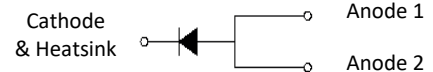


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 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 surge capability
- Very low profile -typical height of 1.1mm
- Ideal for automated placement
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/65/EU



TO-277



Schematic Diagram

Mechanical Data

- Case: TO-277 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, method 2026
- Mounting Position: Any
- Weight: 0.092 grams(approx)

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 specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage, I _R =0.5mA	V _{RRM}	45	V
Maximum Average Forward Rectified Current	I _{F(AV)}	10	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Superimposed On Rated Load (JEDEC Method at Rated T _L)	I _{FSM}	200	A
Typical Thermal Resistance, Junction to Ambient ¹	R _{θJA}	60.0	°C/W
Typical Thermal Resistance, Junction to Lead ¹	R _{θJL}	3.0	
Operating Junction Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instantaneous Forward Voltage	T _J =25°C	I _F =10A	V _F ²	0.43	0.45	V
		I _F =5A		0.38	-	
		I _F =2A		0.33	-	
	T _J =125°C	I _F =10A		0.35	0.40	
		I _F =5A		0.28	-	
		I _F =2A		0.22	-	
Reverse Current	V _R =45V	T _A =25°C	I _R ³	-	150	μA
		T _A =100°C		-	12	mA
		T _A =125°C		-	50	
Typical Junction Capacitance	4V, 1MHz		C _J	2300		pF

Note:

- Units mounted on recommended pad layout, 1 oz. PCB.
- Pulse test: 300 μs pulse width, 1% duty cycle
- Pulse test: pulse width ≤ 40ms

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

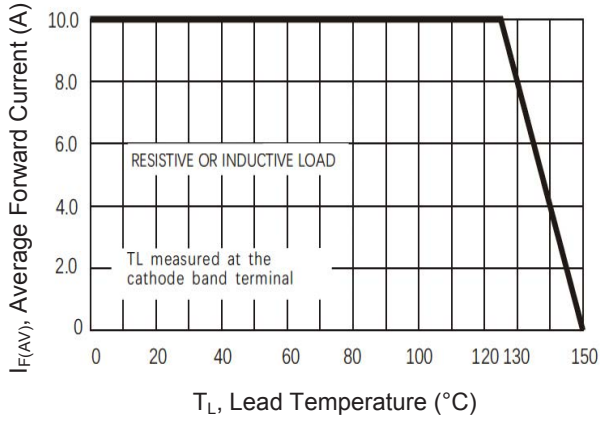


Figure 1. Forward Current Derating Curve

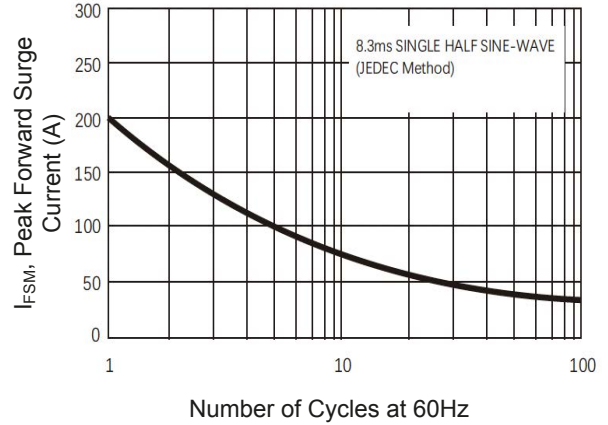


Figure 2. Maximum Non-Repetitive Forward Surge Current

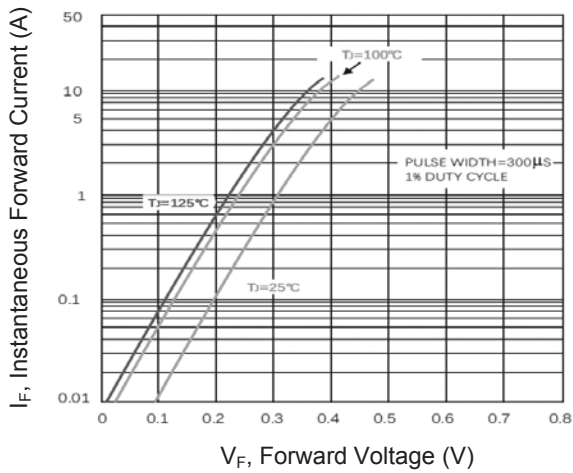


Figure 3. Typical Forward Characteristics

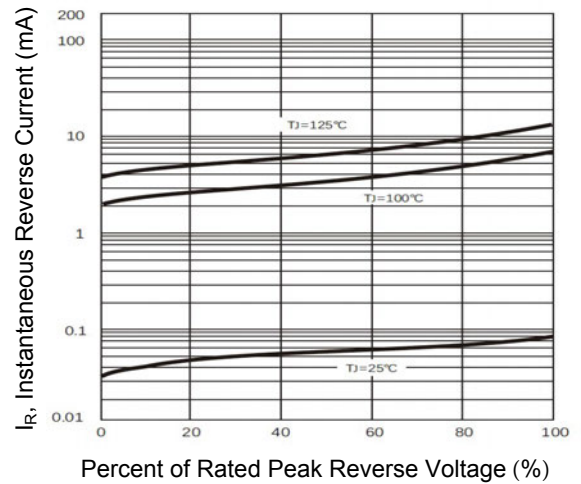


Figure 4. Typical Reverse Characteristics

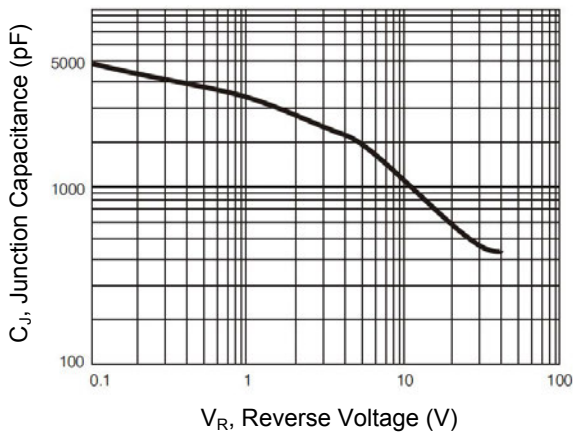
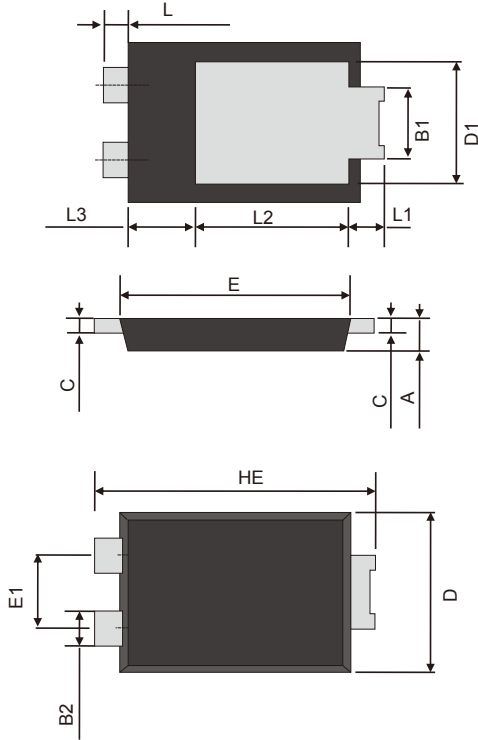


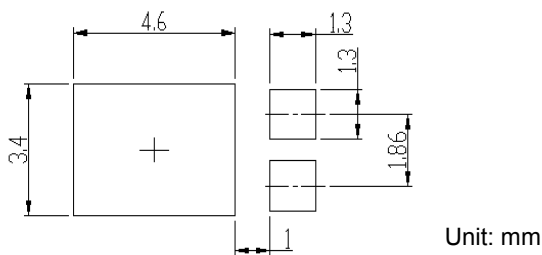
Figure 5. Typical Junction Capacitance

Package Outline Dimensions (TO-277)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
HE	6.35	6.65	0.250	0.262
E	5.28	5.48	0.208	0.216
D	3.80	4.20	0.150	0.165
B1	1.70	1.90	0.067	0.075
B2	0.80	1.00	0.031	0.039
A	0.95	1.25	0.037	0.049
C	0.22	0.38	0.009	0.015
L	0.45	0.65	0.018	0.026
L1	0.70	0.90	0.028	0.035
L2	3.25	3.85	0.128	0.152
L3	1.45	1.65	0.057	0.065
D1	2.80	3.20	0.110	0.126
E1	1.65	1.95	0.065	0.077

Recommended Pad Layout



Order Information

Device	Package	Marking	Carrier	Quantity
GSP10U45L-T	TO-277	SP10U45L-T	Tape & Reel	5,000pcs / Reel