

## TO-277 Plastic-Encapsulate Diodes

### SP1045L Schottky Rectifier Diode

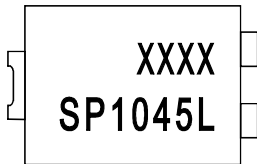
#### Features

- $I_{F(AV)}$  10A
- $V_{RRM}$  45V
- High surge current capability
- Low peak forward voltage

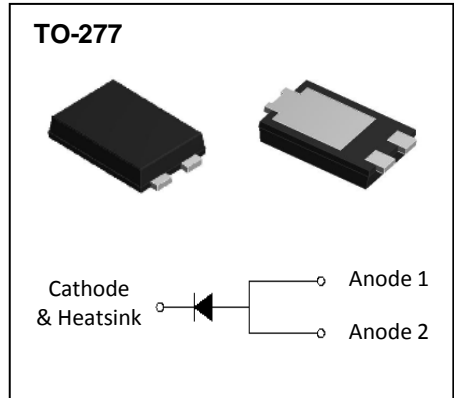
#### Applications

- Rectifier

#### Marking



XXXX=code  
SP1045L=Device code



#### Limiting Values(Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	SP1045L
Repetitive Peak Reverse Voltage	$V_{RRM}$	V		45
Maximum RMS Voltage	$V_{RMS}$	V		31.5
Average Forward Current	$I_{F(AV)}$	A	60Hz Half-sine wave, Resistance load, $T_a=125^\circ\text{C}$	10
Surge(Non-repetitive)Forward Current	$I_{FSM}$	A	60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$	280
Junction Temperature	$T_J$	$^\circ\text{C}$		-55 ~ +150
Storage Temperature	$T_{STG}$	$^\circ\text{C}$		-55 ~ +150

#### Electrical Characteristics ( $T=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Test Condition	SP1045L	
Peak Forward Voltage	$V_F$	V	$I_F=10.0\text{A}$	$T_a=25^\circ\text{C}$	0.42(TYP) 0.45(MAX)
				$T_a=125^\circ\text{C}$	0.32(TYP) 0.36(MAX)
Peak Reverse Current	$I_{RRM1}$	mA	$V_{RM}=V_{RRM}$	$T_a=25^\circ\text{C}$	0.23(TYP) 0.30(MAX)
	$I_{RRM2}$			$T_a=125^\circ\text{C}$	10(TYP) 20(MAX)
Thermal Resistance(Typical)	$R_{\theta J-A}$	$^\circ\text{C}/\text{W}$	Between junction and ambient	80	
	$R_{\theta J-L}$		Between junction and terminal	25	
Typical junction capacitance	$C_J$	nF	$V_R=4.0\text{V}$ , $f=1\text{MHz}$	0.95	

#### Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

# Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

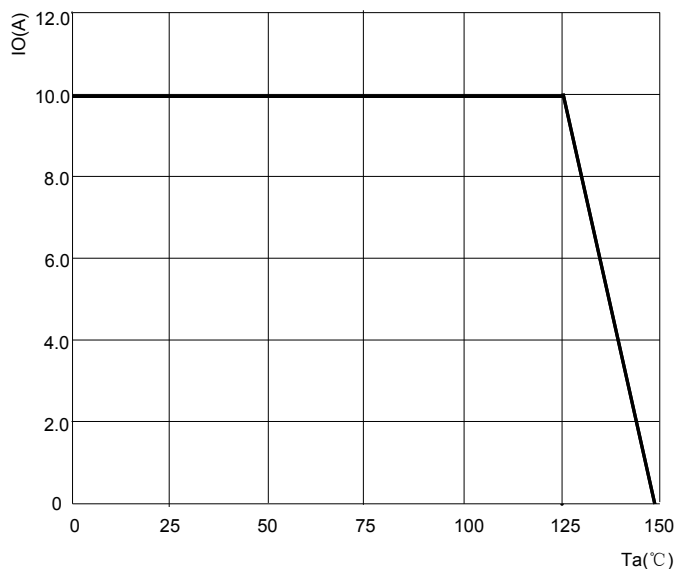


FIG.2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

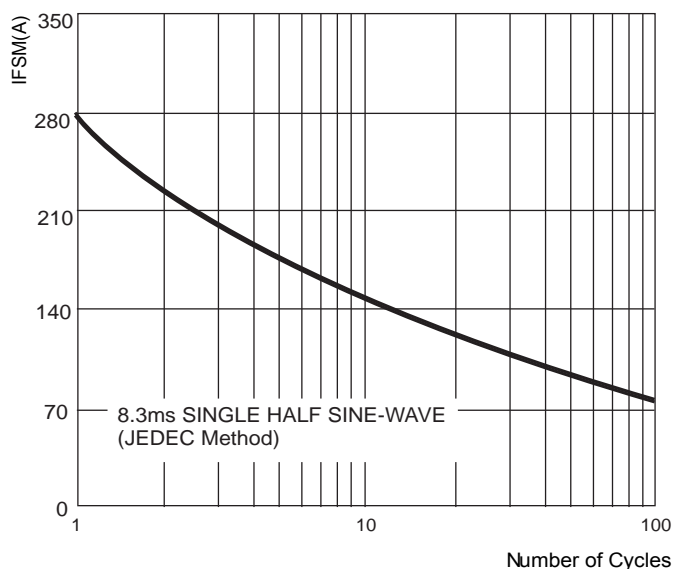


FIG.3: INSTANTANEOUS FORWARD CHARACTERISTICS

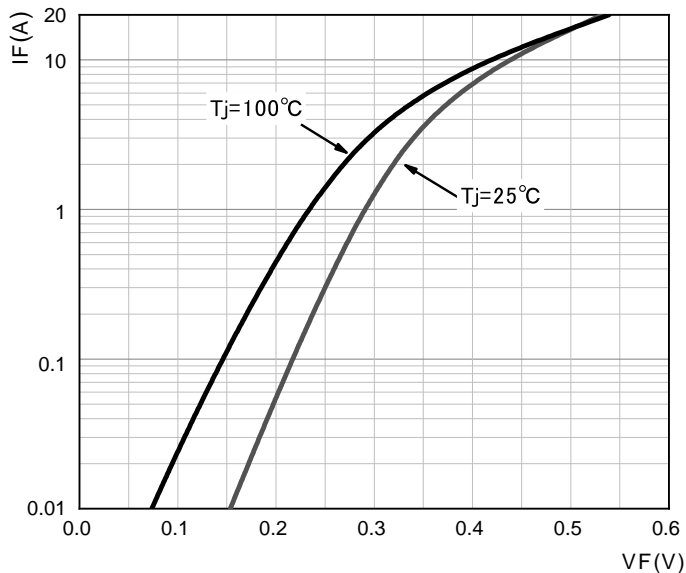
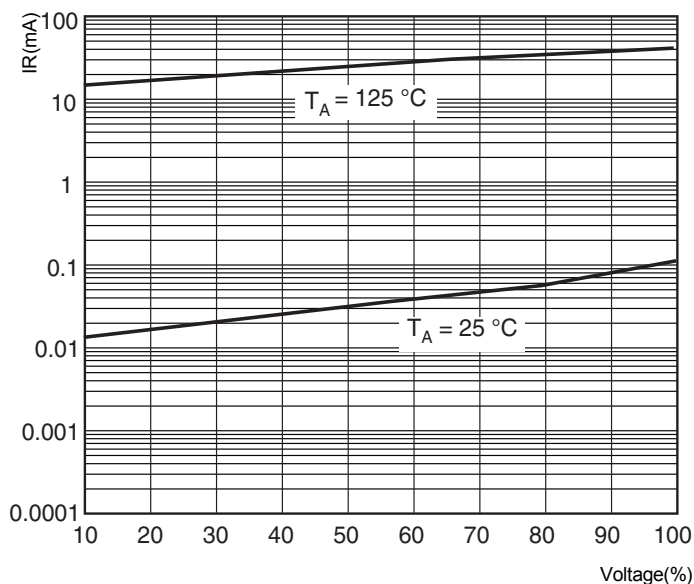
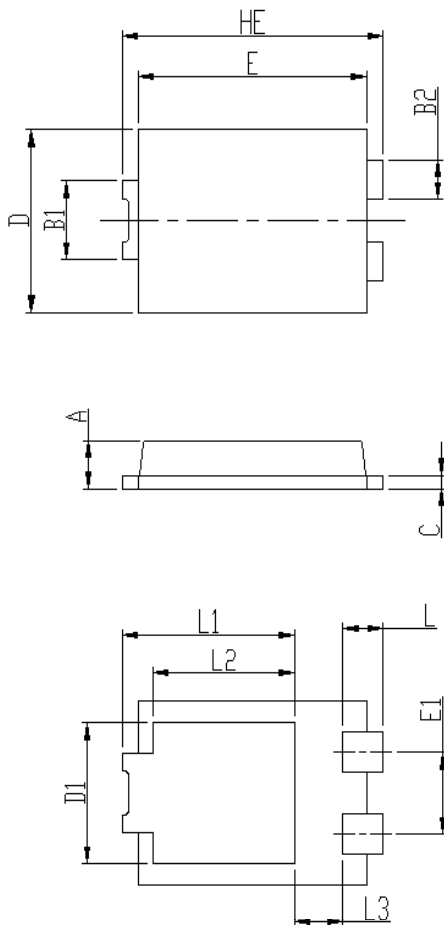


FIG.4: TYPICAL REVERSE CHARACTERISTICS

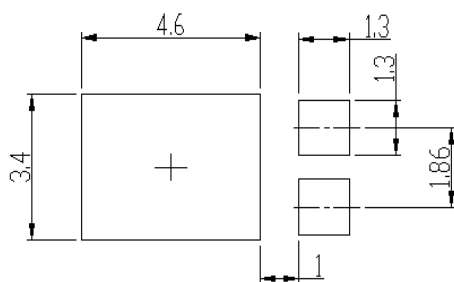


## TO- 277 Package Outline Dimensions



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
HE	6.4	6.6	0.252	0.260
E	5.6	5.8	0.220	0.228
D	4.1	4.3	0.161	0.169
B1	1.7	1.9	0.067	0.075
B2	0.8	1	0.031	0.039
A	1.05	1.2	0.041	0.047
C	0.25	0.4	0.010	0.016
L	0.85	1.1	0.033	0.043
L1	4.2	4.4	0.165	0.173
L2	3.52 Typ.		0.139 Typ.	
L3	1.1	1.4	0.043	0.055
D1	3	3.3	0.118	0.130
E1	1.86 Typ.		0.073 Typ.	

## TO- 277 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

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