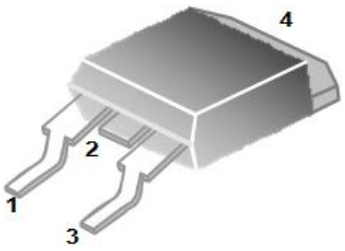
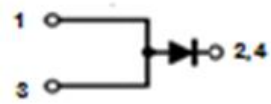
D²PAK





Features

- Metal silicon junction, majority carrier conduction
- Highly stable oxide passivated junction
- Guard ring for stress protection
- Low forward voltage drop
- High current capability
- High surge capability
- High reliability capability
- Suffix “F” indicates halogen free parts, ex. SPSD12L45F
- Ideal for solar panel PV application such as By-Pass diode

Primary Characteristics

$I_{F(AV)}$	12A
V_{RRM}	45V
I_{FSM}	300A
V_F	0.50V
T_J max.	-50 ~ +125 °C

Mechanical Data

- Case：D²PAK, Epoxy, Molded
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- Terminal：Pure tin plated, lead free
- Lead temperature for soldering purpose：260°C max. for 10 sec
- Weight：Approx. 1.8g

Maximum Rating (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	45	V
RMS Reverse Voltage	V_{RMS}	31.5	V
DC Blocking Voltage	V_{DC}	45	V
DC Forward Current	$I_{F(AV)}$	12	A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	300	A
Operating Junction Temperature	T_J	-50 ~ +125	°C
Operating Junction Temperature – in DC forward Mode	T_J	200 max	°C
Storage Temperature	T_{STG}	-50 ~ +150	°C

Maximum Rating (Ta=25°C unless otherwise noted)					
Parameter	Test Condition		Symbol	Max.	Unit
Forward Voltage Drop(1)	T_j=25°C	I_F=12A	V_F	0.50	V
Reverse Leakage Current(1)	T_j=25°C	V_R=V_{RRM}	I_R	500	uA
	T_j=100°C			50	mA

Note:

(1) Pulse test with PW=300us, 1% duty cycle

Typical Characteristics Curves(Ta=25 °C unless otherwise noted)

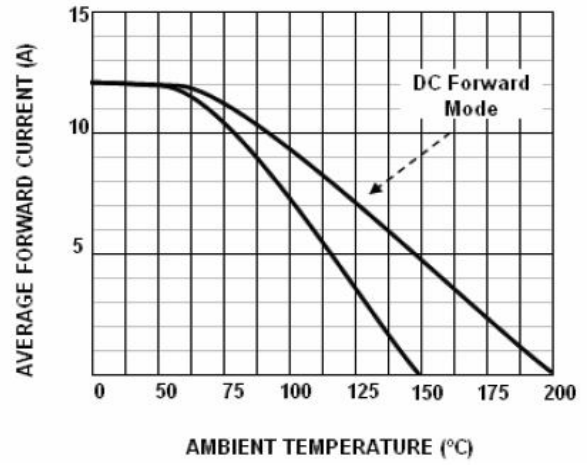


Figure 1. Forward Current Derating Curve

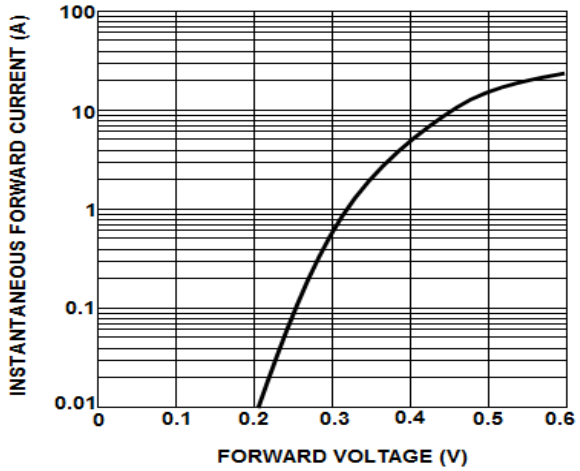


Figure 2. Forward Voltage Characteristics

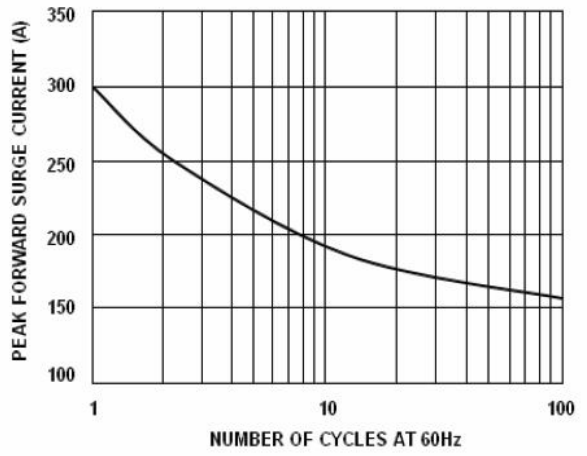


Figure 3. Non-Repetitive Forward Surge Current

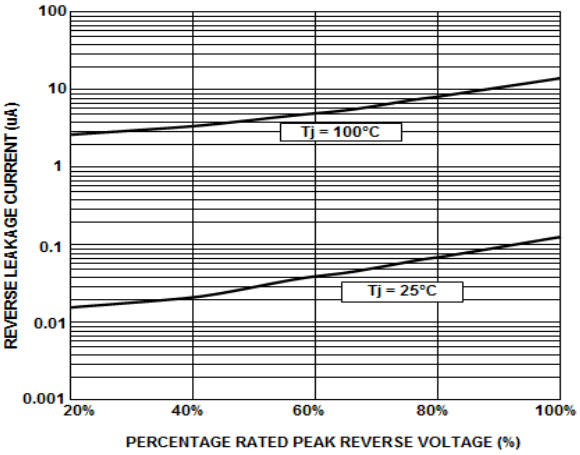
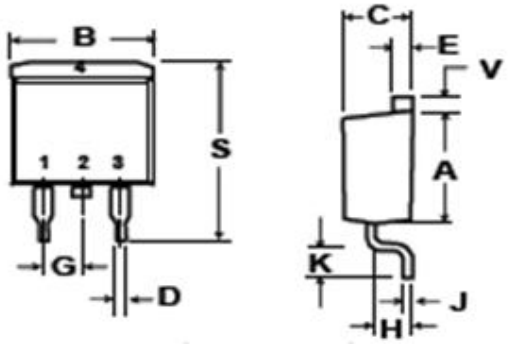


Figure 4. Typical Reverse Characteristics

Package Outline Dimensions



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.340	0.380	8.64	9.65
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.83
D	0.020	0.035	0.51	0.89
E	0.045	0.055	1.14	1.40
G	0.096	0.105	2.44	2.64
H	0.080	0.110	2.03	2.79
J	0.018	0.025	0.46	0.64
K	0.090	0.110	2.29	2.79
S	0.575	0.625	14.60	15.88
V	0.045	0.055	1.14	1.40

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