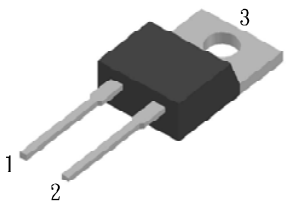
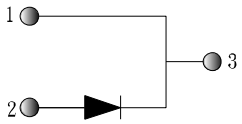
TO-220AC





Primary characteristics

$I_{F(AV)}$	20A
V_{RRM}	45V
I_{FSM}	400A
V_F	0.45V
T_J max. DC forward mode	125°C 200°C

Features

- ROHS Compliant
- Metal silicon junction, majority carrier conduction
- Guard ring for stress protection
- Low forward voltage drop
- High forward surge capability
- High current capability
- Solder dip 260 °C / 10S

Applications

Ideal for solar PV application such as by-pass diode

Mechanical data

- Case: TO-220AC, molded plastic
- Epoxy meets UL 94 V-0 flammability rating
- Terminals: Tin plated leads.
- Polarity: As marked
- Weight: 2.01 grams

Maximum rating (Ta=25 ℃ unless otherwise noted)

Parameter	Symbol	SPST20L45	Unit
Max. repetitive peak reverse voltage	V_{RRM}	45	V
Max. RMS reverse voltage	V_{RMS}	31	
Max. DC blocking voltage	V_{DC}	45	V
Max. average forward current (see Fig.1)	$I_{F(AV)}$	20	A
Non-repetitive peak forward surge current 8.3ms single half-sine-wave	I_{FSM}	400	A
Rating for fusing, 1ms≦t≦8.3ms	I^2t	664	A^2S
Operating junction temperature	T_J	-50 ~ +125	°C
Max. junction temperature in DC forward mode	T_J	200	°C
Storage temperature	T_{STG}	-50 ~ +125	°C
Thermal resistance junction to case(1)	$R_{\Theta J-C}$	1.5	°C/W

Note: (1) Leads are kept at ambient temperature at a distance of 10 mm from case
(2) Pulse test with PW=300us, 1%duty cycle.

Maximum rating (Ta=25 ℃ unless otherwise noted)							
Parameter	Test condition		Symbol	Min.	Typ.	Max.	Unit
Forward voltage drop(2)	T_J=25°C	I_F=5A	V_F	-	0.35	0.40	V
	T_J=125°C			-	0.24	-	V
	T_J=200°C			-	0.17	-	V
	T_J=25°C	I_F=8A	V_F	-	0.38	0.42	V
	T_J=125°C			-	0.27	-	V
	T_J=200°C			-	0.21	-	V
	T_J=25°C	I_F=12A	V_F	-	0.40	-	V
	T_J=125°C			-	0.31	-	V
	T_J=200°C			-	0.26	-	V
	T_J=25°C	I_F=20A	V_F	-	0.45	0.50	V
	T_J=125°C			-	0.38	-	V
	T_J=200°C			-	0.34	-	V
Reverse leakage current	T_J=25°C	V_R=V_{RRM}	I_R	-	0.4	1	mA
	T_J=100°C			-	-	100.0	mA

Note: (1) Leads are kept at ambient temperature at a distance of 10 mm from case
(2) Pulse test with PW=300us, 1%duty cycle.

Typical characteristics (Ta=25 ℃ unless otherwise noted)

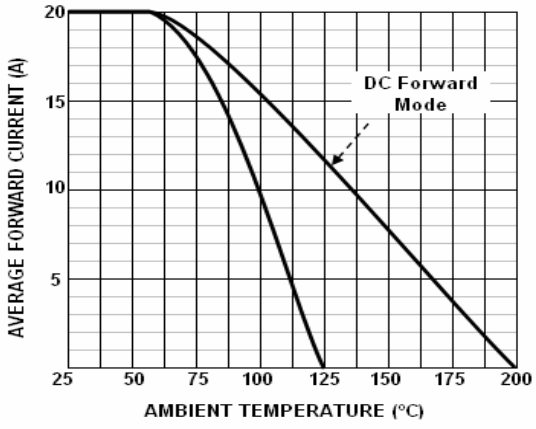


Figure1. Forward current derating curve

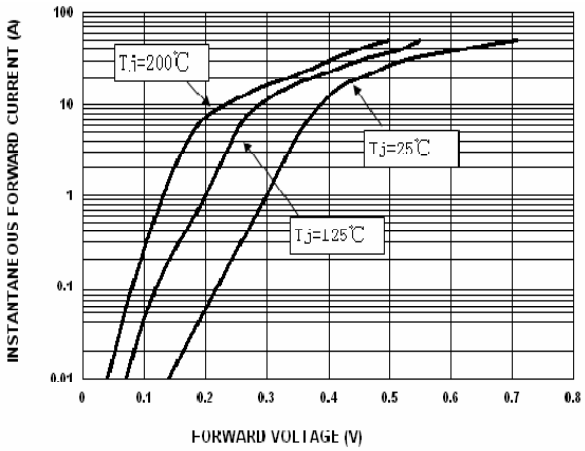


Figure2. Forward voltage characteristics

Typical characteristics (Ta=25 ℃ unless otherwise noted)

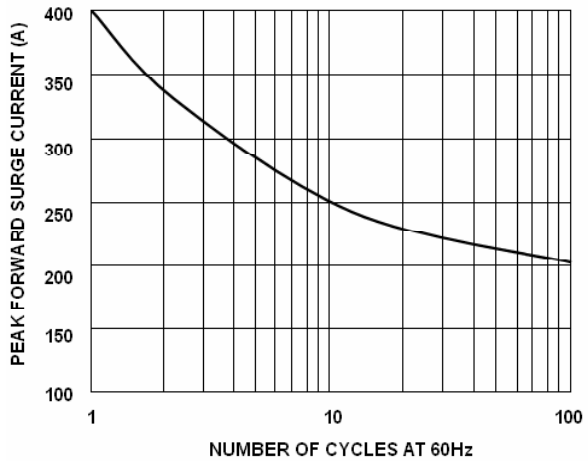


Figure3. Non-repetitive surge current

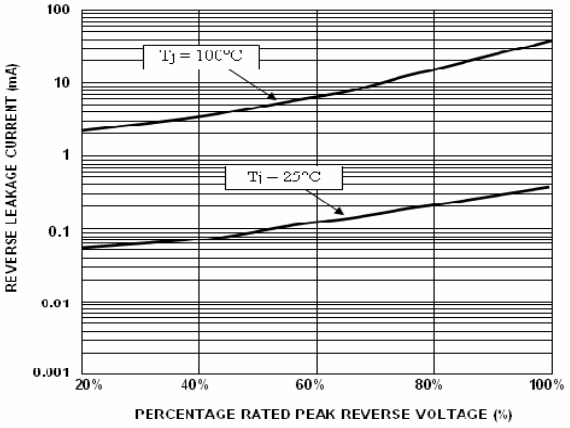
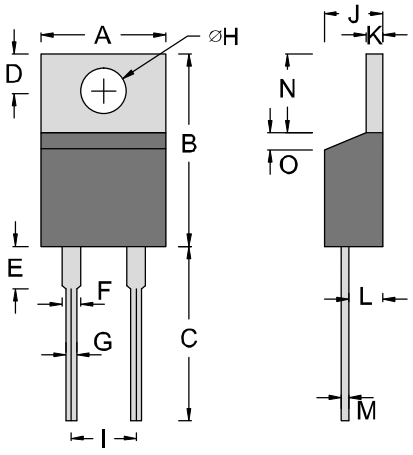


Figure4. Reverse current characteristics

Package outline dimensions



Dim.	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.038	0.405	9.65	10.29
B	0.595	0.620	15.11	15.75
C	0.500	0.562	12.70	14.27
D	0.100	0.120	2.54	3.04
E	0.110	0.130	2.79	3.30
F	0.045	0.060	1.14	1.52
G	0.025	0.035	0.64	0.89
H	0.142	0.147	3.61	3.73
I	0.190	0.210	4.83	5.33
J	0.160	0.190	4.06	4.82
K	0.045	0.055	1.14	1.39
L	0.080	0.110	2.04	2.79
M	0.018	0.025	0.46	0.64
N	0.235	0.255	5.97	6.48
O	0.000	0.050	0.00	1.27