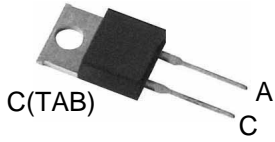


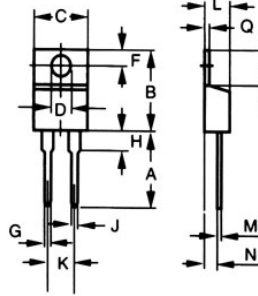
SD30

Discrete Diodes



A=Anode, C=Cathode, TAB=Cathode

Dimensions TO-220AC



Dim.	Inches		Millimeter	
	Min.	Max.	Min.	Max.
A	0.500	0.580	12.70	14.73
B	0.560	0.650	14.23	16.51
C	0.380	0.420	9.66	10.66
D	0.139	0.161	3.54	4.08
E	0.230	0.420	5.85	6.85
F	0.100	0.135	2.54	3.42
G	0.045	0.070	1.15	1.77
H	-	0.250	-	6.35
J	0.025	0.035	0.64	0.89
K	0.190	0.210	4.83	5.33
L	0.140	0.190	3.56	4.82
M	0.015	0.022	0.38	0.56
N	0.080	0.115	2.04	2.49
Q	0.025	0.055	0.64	1.39

	V_{RSM}	V_{RRM}
	V	V
SD3001	50	50
SD3002	100	100
SD3003	200	200
SD3004	400	400
SD3005	600	600
SD3006	800	800
SD3007	1000	1000

Symbol	Test Conditions	Maximum Ratings	Unit
$I_{F(AV)M}$	$T_C=95^\circ\text{C}$; 180° sine	30	A
I_{FSM}	$T_{VJ}=45^\circ\text{C}$; $V_R=0\text{V}$; $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	300 330	A
	$T_{VJ}=150^\circ\text{C}$; $V_R=0\text{V}$; $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	270 300	
I^2t	$T_{VJ}=45^\circ\text{C}$; $V_R=0\text{V}$; $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	450 460	A^2s
	$T_{VJ}=150^\circ\text{C}$; $V_R=0\text{V}$; $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	365 385	
T_{VJ} T_{VJM} T_{stg}		-40...+150 150 -40...+150	$^\circ\text{C}$
M_d	Mounting torque	0.4...0.6	Nm
Weight		2	g

Symbol	Test Conditions	Characteristic Values	Unit
I_R	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$	≤ 1	mA
V_F	$I_F=45\text{A}$; $T_{VJ}=25^\circ\text{C}$	≤ 1.45	V
V_{To}	For power-loss calculations only	0.85	V
r_T	$T_{VJ}=T_{VJM}$	13	$\text{m}\Omega$
R_{thJC}	DC current	1.0	K/W

SD30

Discrete Diodes

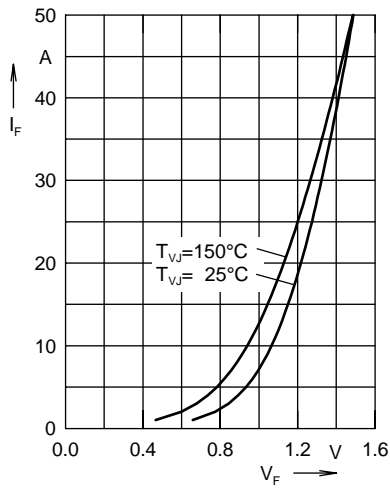


Fig. 1 Forward current versus voltage drop per diode

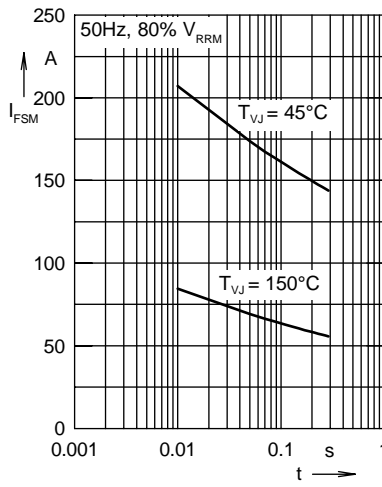


Fig. 2 Surge overload current

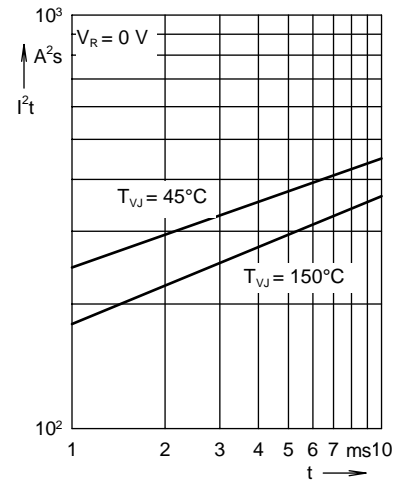


Fig. 3 I^2t versus time per diode

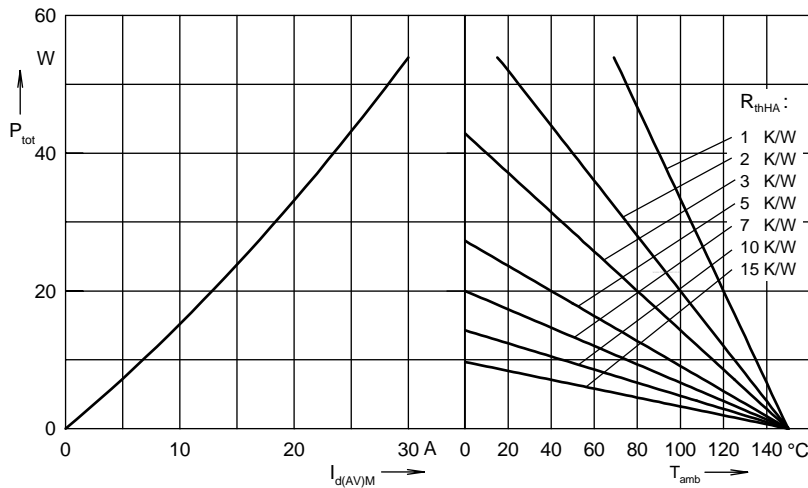


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

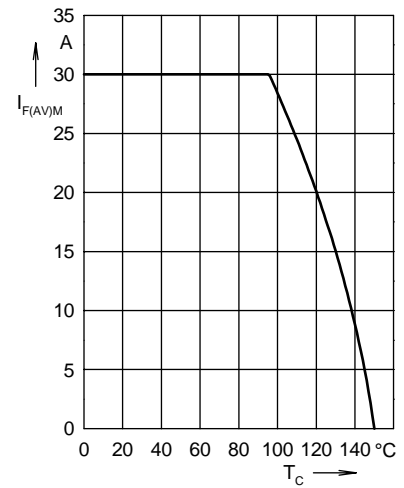


Fig. 5 Max. forward current versus case temperature

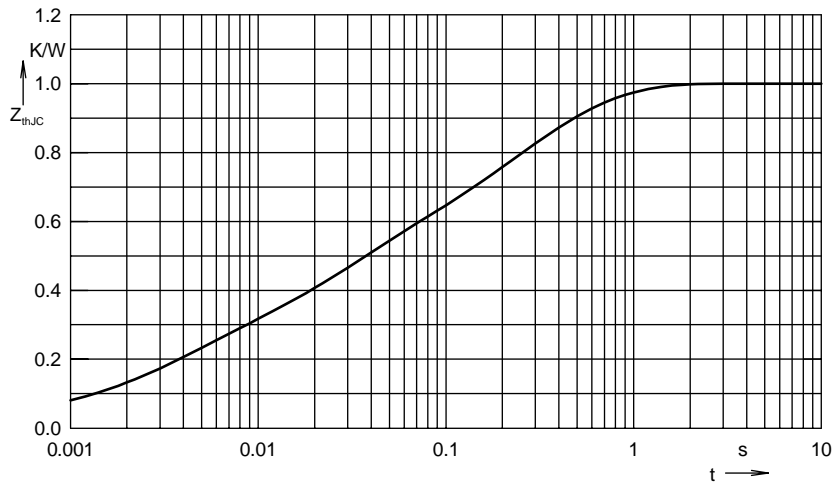


Fig. 6 Transient thermal impedance junction to case

Constants for $Z_{\theta JC}$ calculation:

i	$R_{\theta i}$ (K/W)	t_i (s)
1	0.01362	0.0001
2	0.1962	0.00316
3	0.267	0.023
4	0.3052	0.4
5	0.218	0.15