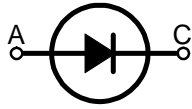
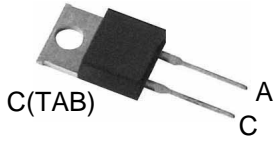


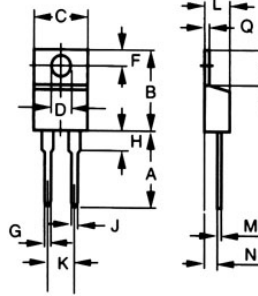
# SD30

## 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
<b>SD3001</b>	50	50
<b>SD3002</b>	100	100
<b>SD3003</b>	200	200
<b>SD3004</b>	400	400
<b>SD3005</b>	600	600
<b>SD3006</b>	800	800
<b>SD3007</b>	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	$\text{A}^2\text{s}$
	$T_{VJ}=150^\circ\text{C}$ ; $V_R=0\text{V}$ ; $t=10\text{ms}$ (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
$I_R$	$T_{VJ}=T_{VJM}$ ; $V_R=V_{RRM}$	$\leq 1$	mA
$V_F$	$I_F=45\text{A}$ ; $T_{VJ}=25^\circ\text{C}$	$\leq 1.45$	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

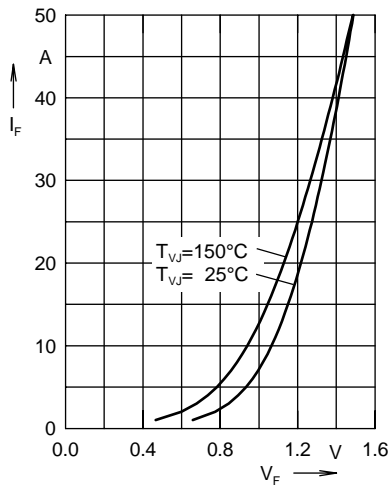


Fig. 1 Forward current versus voltage drop per diode

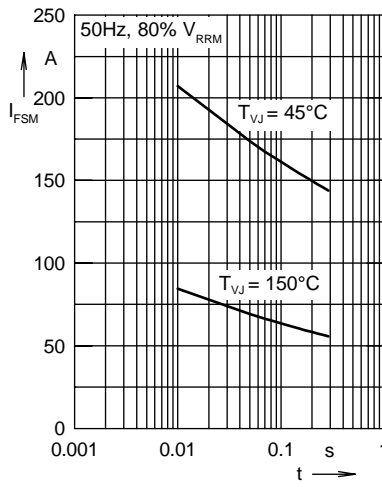


Fig. 2 Surge overload current

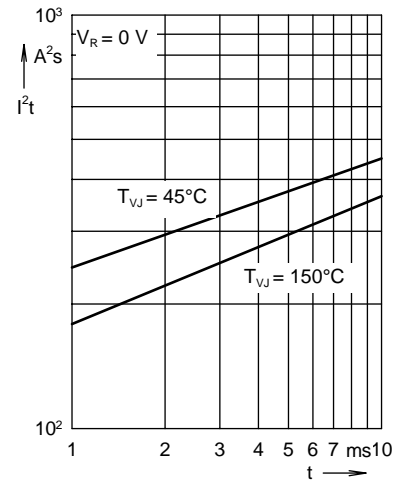


Fig. 3  $I^2t$  versus time per diode

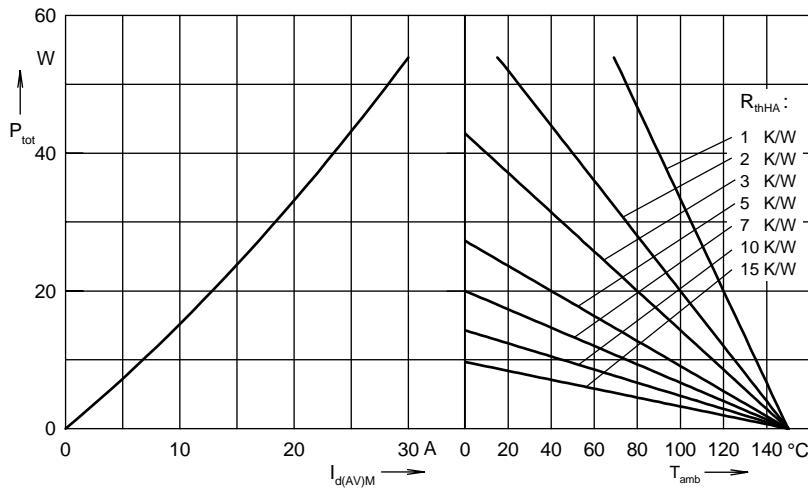


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

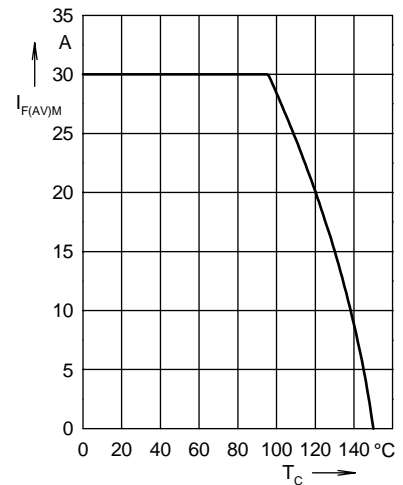


Fig. 5 Max. forward current versus case temperature

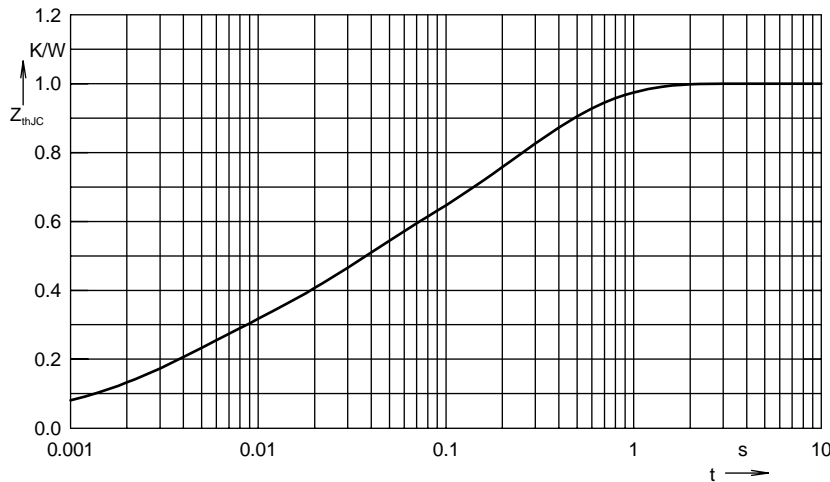


Fig. 6 Transient thermal impedance junction to case

Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (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