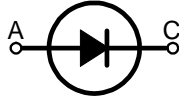
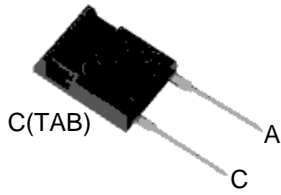
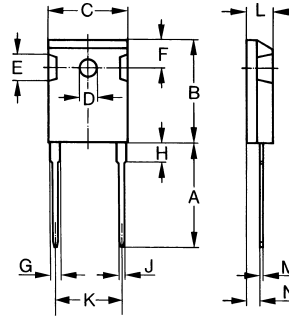


# SD45

## Discrete Diodes



Dimensions TO-247AC



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

A=Anode, C=Cathode, TAB=Cathode

	$V_{RSM}$	$V_{RRM}$
	V	V
<b>SD4501</b>	50	50
<b>SD4502</b>	100	100
<b>SD4503</b>	200	200
<b>SD4504</b>	400	400
<b>SD4505</b>	600	600
<b>SD4506</b>	800	800
<b>SD4507</b>	1000	1000

Symbol	Test Conditions	Maximum Ratings	Unit
$I_{F(AV)M}$	$T_C=105^{\circ}C$ ; 180° sine	45	A
$I_{FSM}$	$T_{VJ}=45^{\circ}C$ ; $V_R=0V$ ; $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	475 520	A
	$T_{VJ}=150^{\circ}C$ ; $V_R=0V$ ; $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	380 420	
$I^2t$	$T_{VJ}=45^{\circ}C$ ; $V_R=0V$ ; $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	1120 1120	$A^2s$
	$T_{VJ}=150^{\circ}C$ ; $V_R=0V$ ; $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine	720 720	
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+150 150 -40...+150	$^{\circ}C$
$M_d$	Mounting torque	0.8...1.2	Nm
$V_{ISOL}$	50/60 Hz, RMS, $t=1$ minute, leads-to-tab	2500	V~
<b>Weight</b>		6	g

Symbol	Test Conditions	Characteristic Values	Unit
$I_R$	$T_{VJ}=T_{VJM}$ ; $V_R=V_{RRM}$	$\leq 3$	mA
$V_F$	$I_F=45A$ ; $T_{VJ}=25^{\circ}C$	$< 1.18$	V
$V_{To}$	For power-loss calculations only	0.8	V
$r_T$	$T_{VJ}=T_{VJM}$	8	$m\Omega$
$R_{thJC}$ $R_{thCH}$	DC current typical	0.55 0.2	K/W

**Sirectifier**®

# SD45

## Discrete Diodes

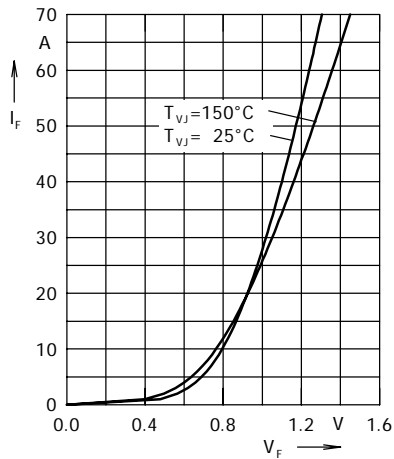


Fig. 1 Forward current versus voltage drop per diode

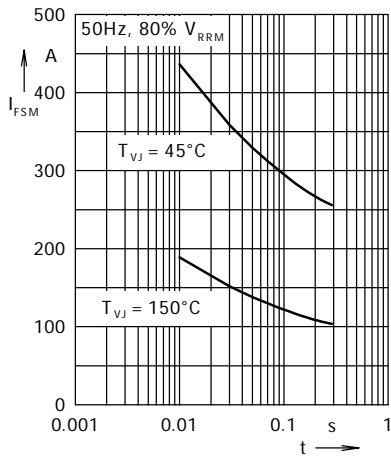


Fig. 2 Surge overload current

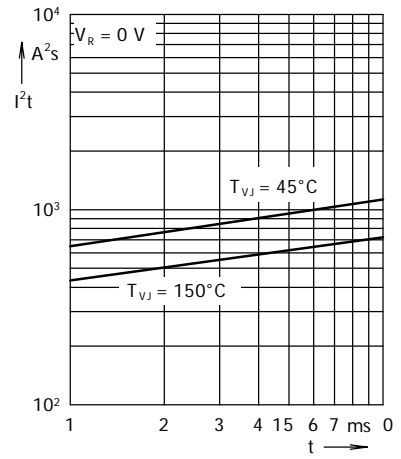


Fig. 3  $I^2t$  versus time per diode

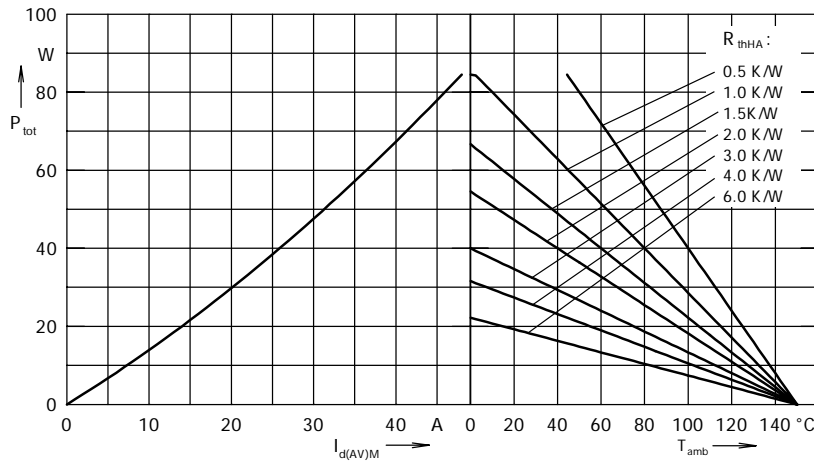


Fig. 4 Power dissipation versus direct output current and ambient temperature, sine 180°

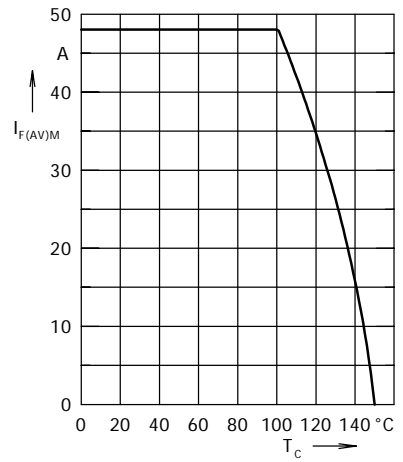


Fig. 5 Max. forward current versus case temperature

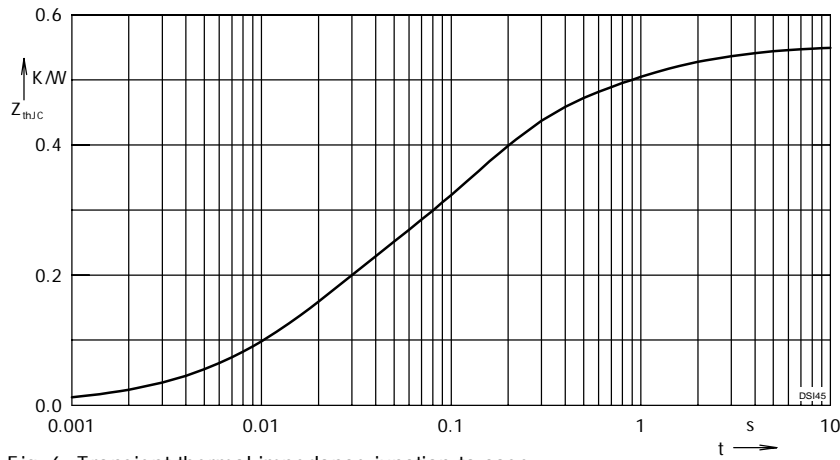


Fig. 6 Transient thermal impedance junction to case

Constants for  $Z_{thjC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.1633	0.016
2	0.2517	0.118
3	0.0933	0.588
4	0.04167	2.6

