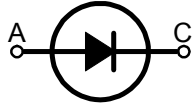
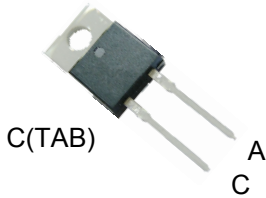


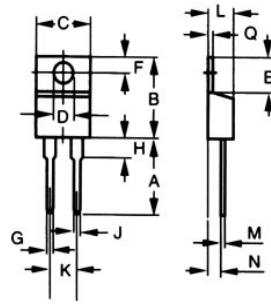
# 常州国润电子有限公司

## MUR540

### Ultra Fast Recovery Diodes



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	2.300	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

A=Anode, C=Cathode, TAB=Cathode

	$V_{RSM}$	$V_{RRM}$
	V	V
<b>MUR540</b>	400	400

Symbol	Test Conditions	Maximum Ratings	Unit
<b>IFRMS</b>	$T_{VJ}=T_{VJM}$	14	A
<b>IFAVM</b>	$T_C=115^{\circ}\text{C}$ ; rectangular, $d=0.5$	5	
<b>IFRM</b>	$t_p < 10\mu\text{s}$ ; rep. rating, pulse width limited by $T_{VJM}$	110	
<b>IFSM</b>	$T_{VJ}=45^{\circ}\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	A
	$T_{VJ}=150^{\circ}\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	
<b><math>i^2t</math></b>	$T_{VJ}=45^{\circ}\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	$\text{A}^2\text{s}$
	$T_{VJ}=150^{\circ}\text{C}$	$t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	
<b><math>T_{VJ}</math></b> <b><math>T_{VJM}</math></b> <b><math>T_{stg}</math></b>		-40...+150 150 -40...+150	$^{\circ}\text{C}$
<b><math>P_{tot}</math></b>	$T_C=25^{\circ}\text{C}$	45	W
<b><math>M_d</math></b>	Mounting torque	0.4...0.6	Nm
<b>Weight</b>		2	g



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## MUR540

### Ultra Fast Recovery Diodes

Symbol	Test Conditions	Characteristic Values	Unit
$I_R$	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$	10	$\mu\text{A}$
	$T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$	5	$\mu\text{A}$
	$T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$	1.0	mA
$V_F$	$I_F=5\text{A}; T_{VJ}=150^{\circ}\text{C}$	1.1	V
	$T_{VJ}=25^{\circ}\text{C}$	1.35	
$V_{TO}$	For power-loss calculations only	0.98	V
$r_T$	$T_{VJ}=T_{VJM}$	28.7	$\text{m}\Omega$
$R_{thJC}$		2.5	K/W
$R_{thCK}$		0.5	
$R_{thJA}$		3.0	
$t_{rr}$	$I_F=1\text{A}; -di/dt=50\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	35	ns
$I_{RM}$	$V_R=350\text{V}; I_F=8\text{A}; -di_F/dt=64\text{A}/\mu\text{s}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$	2.5	A

#### FEATURES

- \* International standard package JEDEC TO-220AC
- \* Very short recovery time
- \* Extremely low switching losses
- \* Low  $I_{RM}$ -values

#### APPLICATIONS

- \* Antiparallel diode for high frequency switching devices
- \* Antisaturation diode
- \* Snubber diode
- \* Free wheeling diode in converters and motor control circuits
- \* Rectifiers in switch mode power supplies (SMPS)
- \* Inductive heating and melting
- \* Uninterruptible power supplies (UPS)
- \* Ultrasonic cleaners and welders

#### ADVANTAGES

- \* High reliability circuit operation
- \* Low voltage peaks for reduced protection circuits
- \* Low noise switching
- \* Low losses
- \* Operating at lower temperature or space saving by reduced cooling



## MUR540 Ultra Fast Recovery Diodes

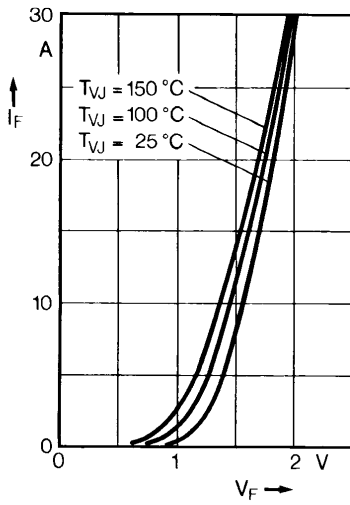


Fig. 1 Forward current versus voltage drop.

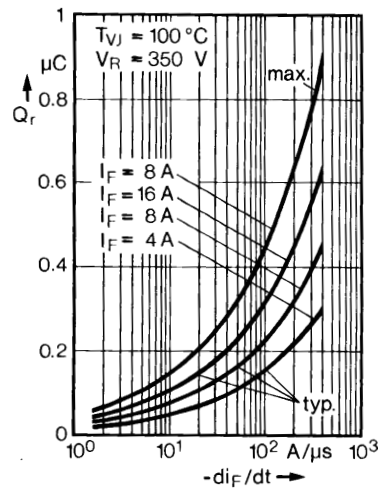


Fig. 2 Recovery charge versus  $-di_F/dt$ .

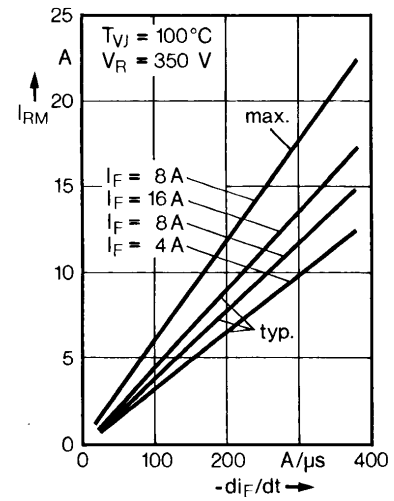


Fig. 3 Peak reverse current versus  $-di_F/dt$ .

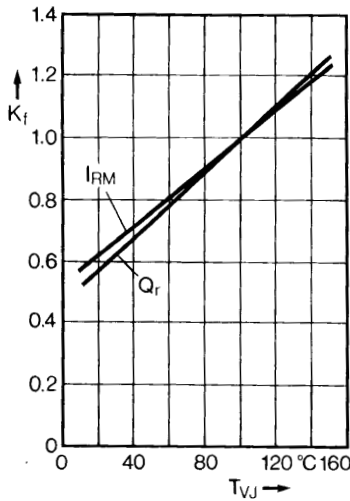


Fig. 4 Dynamic parameters versus junction temperature.

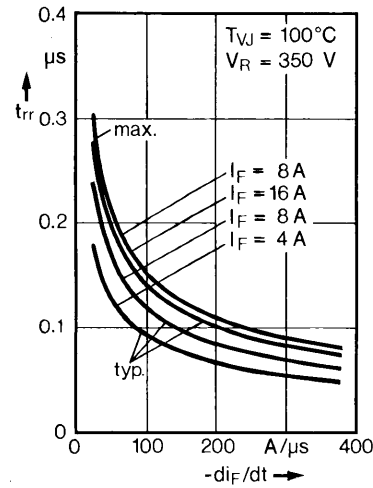


Fig. 5 Recovery time versus  $-di_F/dt$ .

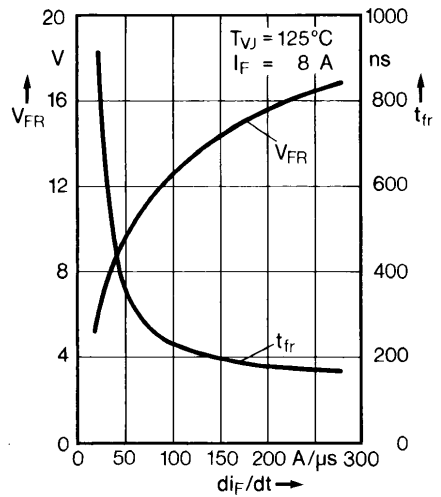


Fig. 6 Peak forward voltage versus  $di_F/dt$ .

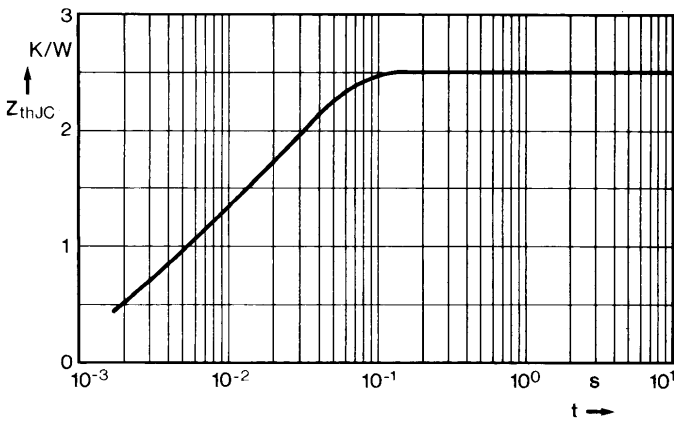


Fig. 7 Transient thermal impedance junction to case.

