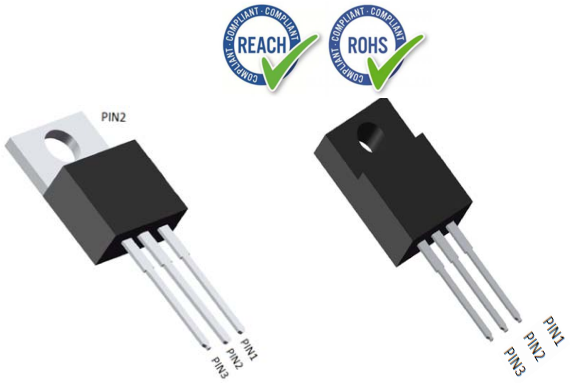
MUR4040CT/MUR4040FCT

Ultra-Fast Recovery Diodes 20A*2 FRD Pt



Features

- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package**: TO-220AB ITO-220AB
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

TYPE	VRSM V	VRRM V
MUR4040CT	200	200
MUR4040FCT	200	200

Rating	Symbol		Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	V
Average Rectified Forward Current (Rated V_R) Per Leg Per Device	$I_{F(AV)}$	 20 @ T_C = 150°C 40 @ T_C = 150°C	A
Peak Rectified Forward Current, Per Leg (Rated V_R, Square Wave, 20 kHz, T_C = 150°C)	I_{FRM}	40 @ T_C = 150°C	A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz) Per Leg	I_{FSM}	300	A
Operating Junction and Storage Temperature	T_J, T_{stg}	− 65 to +175	°C

THERMAL CHARACTERISTICS (Per Diode Leg)

Maximum Thermal Resistance, − Junction−to−Case − Junction−to−Ambient	 $R_{\theta JC}$ $R_{\theta JA}$	 1.5 40	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 1) (I_F = 20 Amp, T_C = 150°C) (I_F = 20 Amp, T_C = 25°C)	V_F	 1.30	V
Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, T_J = 150°C) (Rated DC Voltage, T_J = 25°C)	i_R	 5000 60	μA
Maximum Reverse Recovery Time (i_F = 1.0 A, di/dt = 50 A/μs)	t_{rr}	50	ns

■Characteristics (Typical)

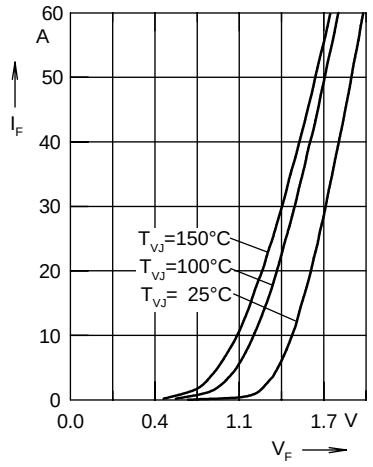


Fig. 1 Forward current I_F versus V_F

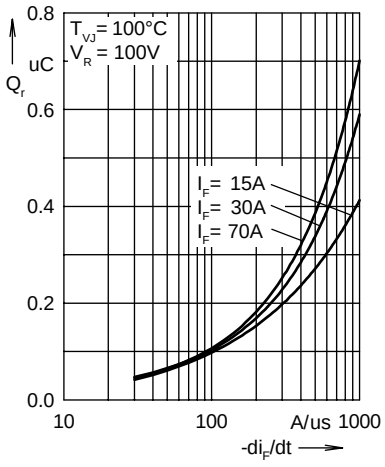


Fig. 2 Typ. reverse recovery charge Q_r versus -di_F/dt

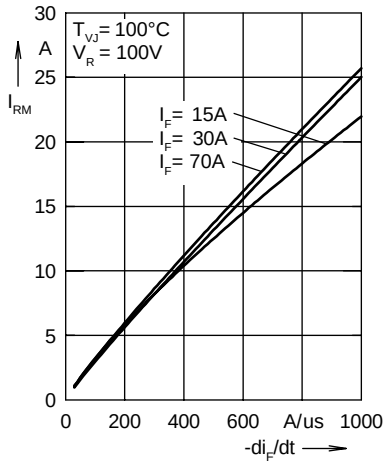


Fig. 3 Typ. peak reverse current I_{RM} versus -di_F/dt

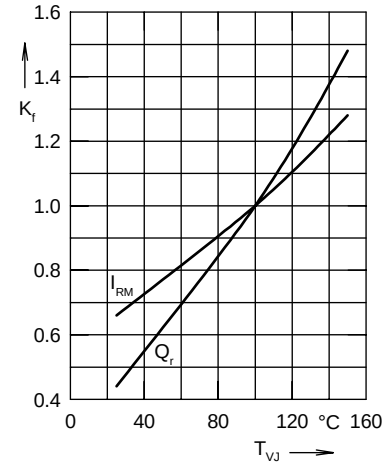


Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

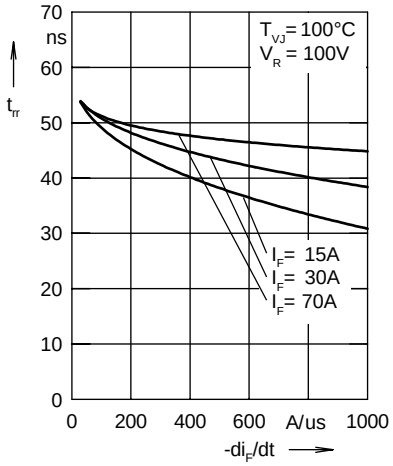


Fig. 5 Typ. recovery time t_{rr} versus -di_F/dt

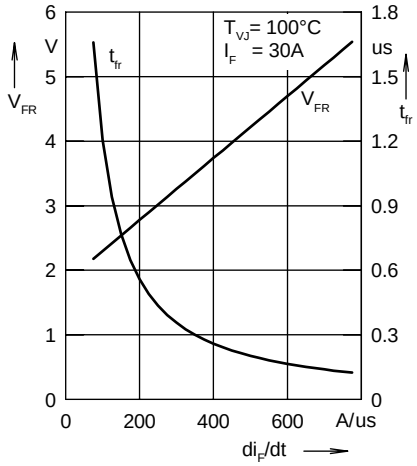


Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr} versus di_F/dt

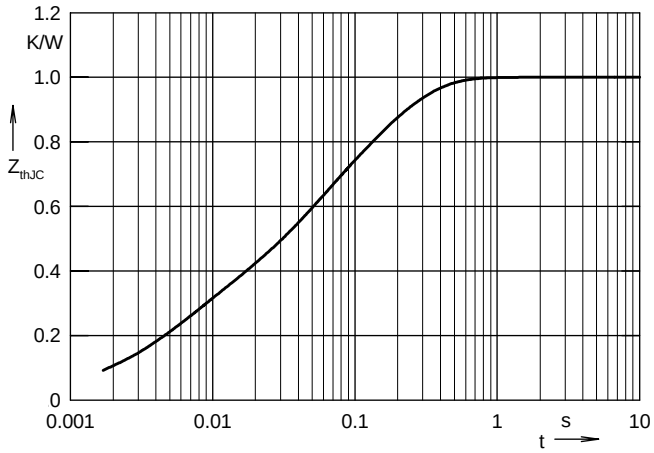
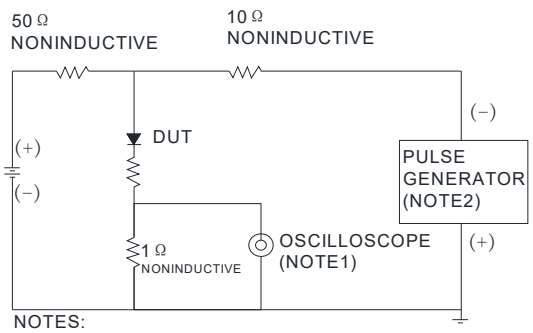
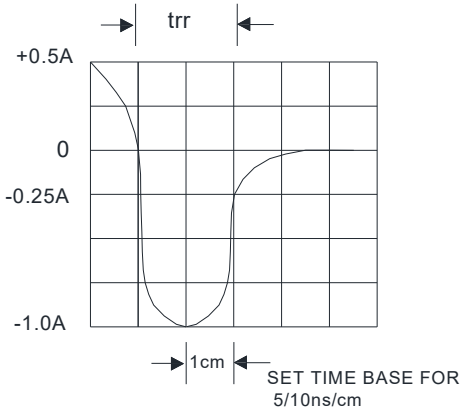


Fig. 7 Transient thermal impedance junction to case

FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

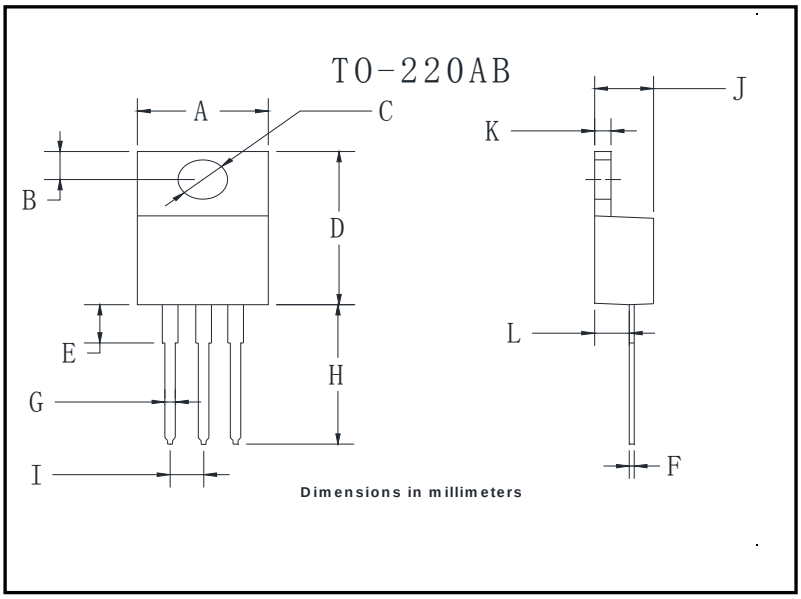
PARAMETER		SYMBOL	UNIT	MUR4040CT/MUR4040FCT
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	4.0
	Between junction and Air	$R_{\theta J-A}$	℃/W	50

■Ordering Information (Example)

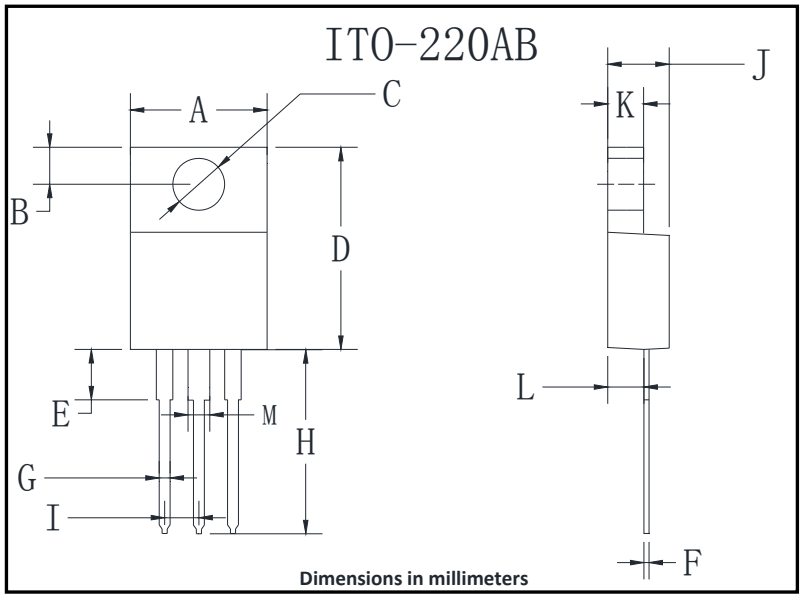
PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR4040CT/MUR4040FCT	Approximate 1.6	50	1000	5000	Tube

MUR4040CT/MUR4040FCT

■Outline Dimensions



TO-220AB		
Dim	Min	Max
A	9.5	10.9
B	2.22	3.27
C	3.34	4.31
D	14.5	15.5
E	3.16	4.46
F	0.28	0.64
G	0.68	0.94
H	13.06	14.62
I	2.01	3.07
J	4.04	5.1
K	1.14	1.4
L	2.14	3.19



ITO-220AB		
Dim	Min	Max
A	9.8	10.2
B	2.25	2.75
C	2.95	3.45
D	14.75	15.25
E	3.05	3.95
F	0.45	0.75
G	0.45	0.75
H	13.4	14.2
I	2.35	2.75
J	4.3	4.8
K	2.58	2.82
L	2.58	2.82
M	1.47	1.77

Packge	Packing	Box Size L×W×H(mm)	Quatity(pcs/box)	Carton Size L×W×H(mm)	Quatity(pcs/carton)
TO-220AB	50pcs/Tube	558×148×38	1000	565×225×175	5000