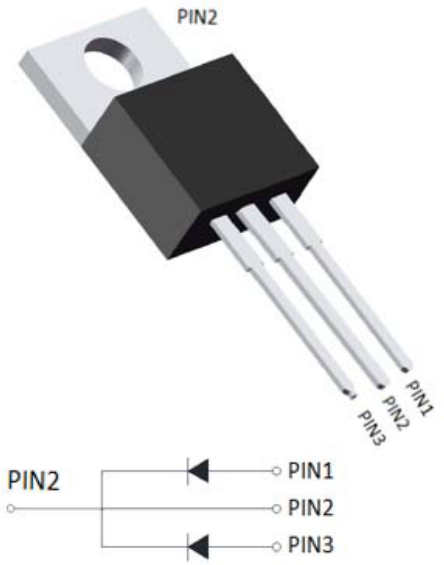
Ultra-Fast Recovery FRED Diodes 5A x 2
MUR1020CT Through MUR1060CT TO-220AB



■ DESCRIPTION & APPLICATIONS

The FRED (Fast Recovery Epitaxial Diode) series are ultrafast recovery rectifiers specifically designed with an optimized performance of forward voltage drop and ultrafastrecover time. These decives are ideal for use in the output rectification stage of SMPS, UPS, DC/DC converters; as well as, Power Factor Correction/ freewheeling diode in low voltage inverters, chopper motor drives, and reverse battery application. Their low recovery current minimizes the switching losses.

■ MECHANICAL DATA

- **Package**: TO-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)

PARAMETER	SYMBOL	UNIT	MUR1020CT	MUR1040CT	MUR1060CT
Device marking code			MUR1020CT	MUR1040CT	MUR1060CT
Repetitive Peak Reverse Voltage	V_{RRM}	V	200	400	600
Average Rectified Output Current @60Hz sine wave, R-load, T_C(FIG.1)	I_O	A	10	10	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T_a=25℃	I_{FSM}	A	50	50	50
Current Squared Time @1ms≤t≤8.3ms Tj=25℃,	I^2t	A^2s	10	10	10
Storage Temperature	Tstg	℃	-55 ~ +150	-55 ~ +150	-55 ~ +150
Junction Temperature	Tj	℃	-55 ~ +150	-55 ~ +150	-55 ~ +150
Junction capacitance @4V,1MHz	Cj	pF	50	50	20

■ ELECTRICAL CHARACTERISTICS (Ta=25℃ Unless otherwise specified)

					1020CT		1040CT		1060CT	
PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max	Typ	Max	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	I_{FM}=5.0A @Tj=25℃	-	0.95	1	1.15	1.25	1.45	1.6
			I_{FM}=5.0A @Tj=150℃		0.78	0.9	0.9	1	1.15	1.3
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	V_{RM}=V_{RRM} Tj=25℃	-	-	5	-	5	-	10
	I_{RRM2}		V_{RM}=V_{RRM} Tj=150℃	-	25	50	25	50	35	200
Reverse Recovery Time	Trr	ns	I_F=0.5A I_{RM}=1A I_{RR}=0.25A Tj=25℃	-	25	35	25	35	25	35
Peak recovery current	I_{RRM}	A	Tj=25℃	-	3.11	-	3.49	-	3.06	-
			Tj=125℃	-	5.43	-	5.71	-	5.07	-
Reverse recovery charge	Qrr	nC	Tj=25℃ IF=5A di/dt=-200A/us V_{RM}=100V	-	29.64	-	55.22	-	78.88	-
			Tj=125℃	-	80	-	130	-	280	-

■ THERMAL CHARACTERISTICS （T_a=25℃ Unless otherwise specified）

PARAMETER		SYMBOL	UNIT	MUR1020CT	MUR1040CT	MUR1060CT
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	2.0	2.0	2.0
Thermal Resistance	Between junction and Air	$R_{\theta J-A}$	℃/W	50	50	50

■ PACKAGING INFORMATION

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR1020CT, MUR1040CT, MUR1060CT	Approximate 1.88	50	1000	5000	Tube

■ CHARACTERISTICS MUR1020CT (TYPICAL)

FIG1:Io -Tc Curve

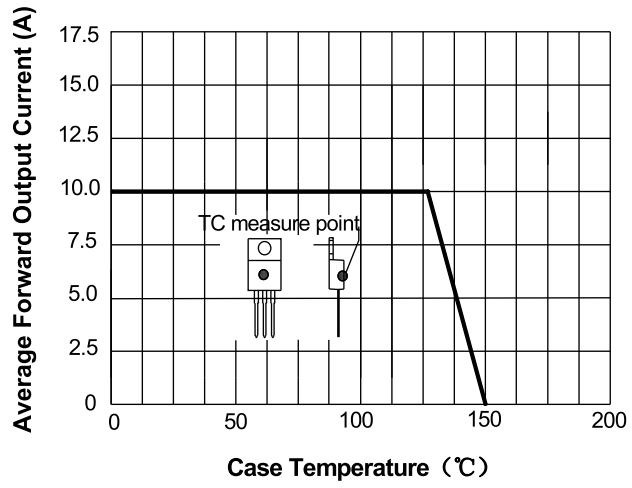


FIG2:Surge Forward Current Capability

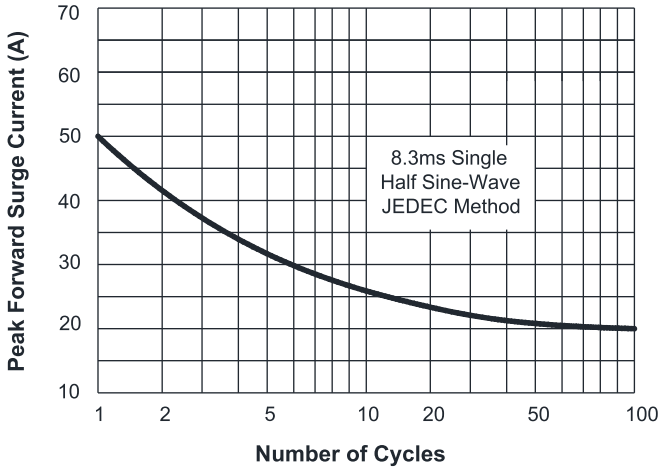


FIG3: Forward Voltage

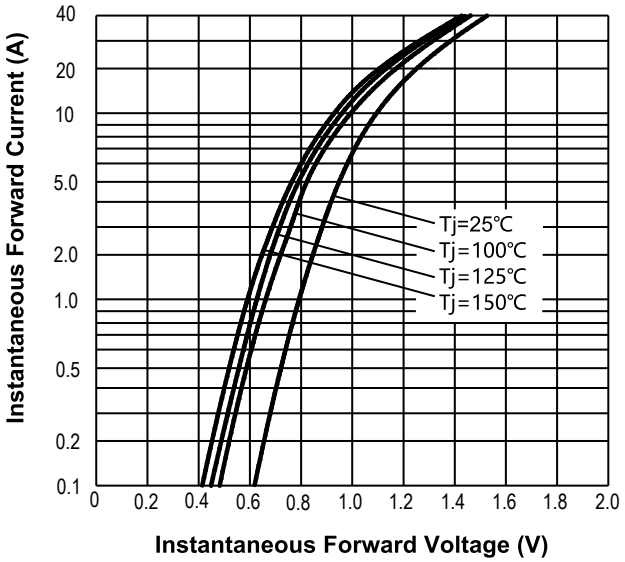


FIG.4: Instantaneous Reverse Characteristics

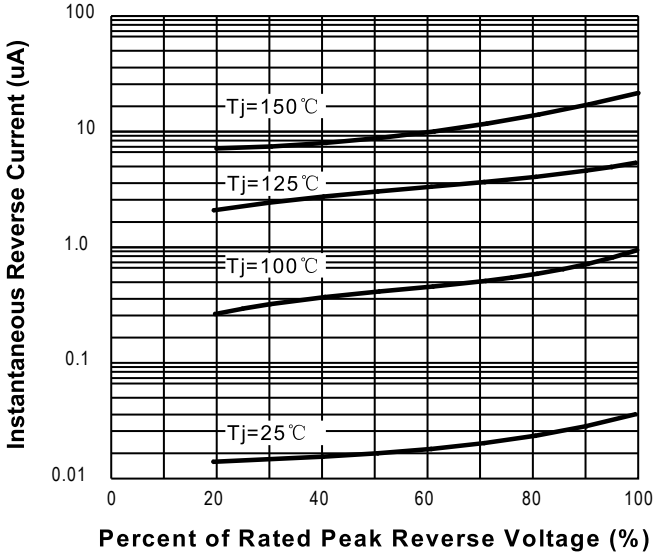
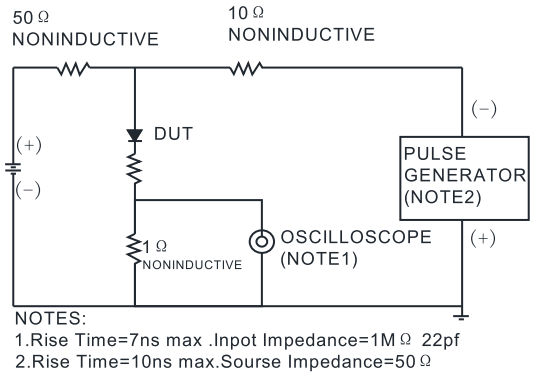
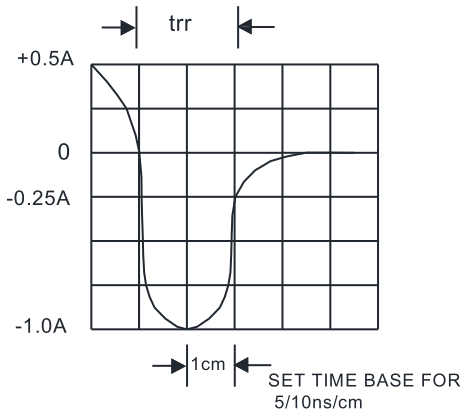


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





■ CHARACTERISTICS MUR1040CT (TYPICAL)

FIG1:Io -Tc Curve

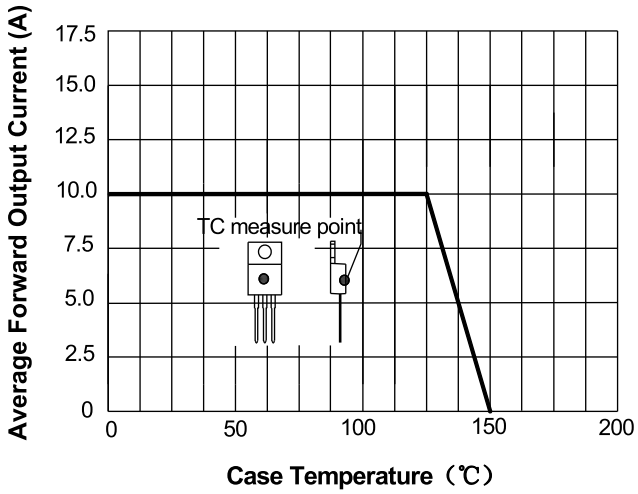


FIG2:Surge Forward Current Capability

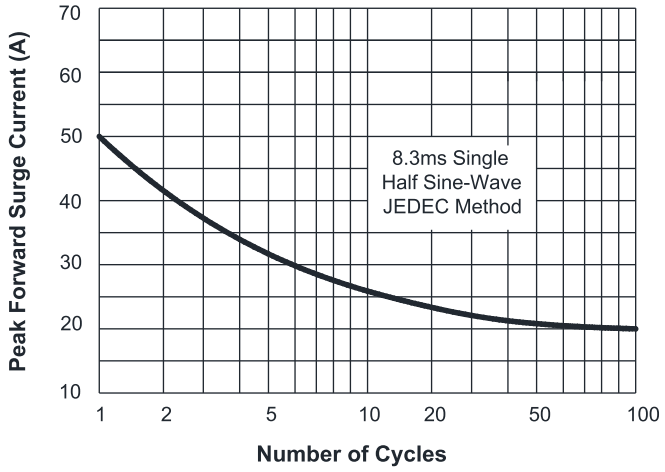


FIG3: Forward Voltage

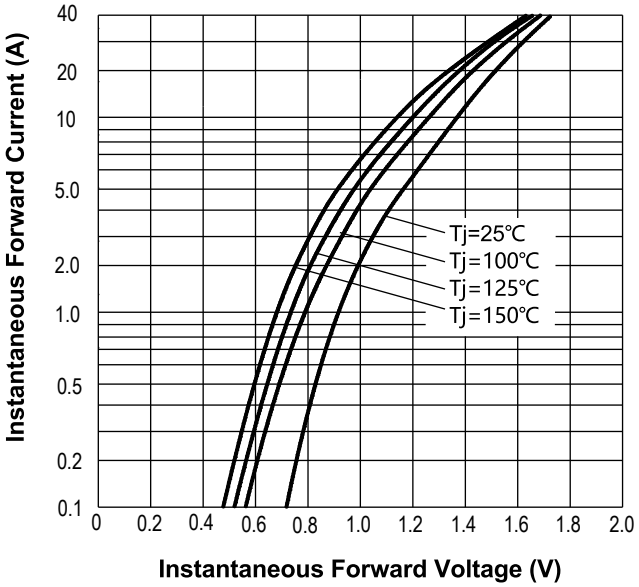
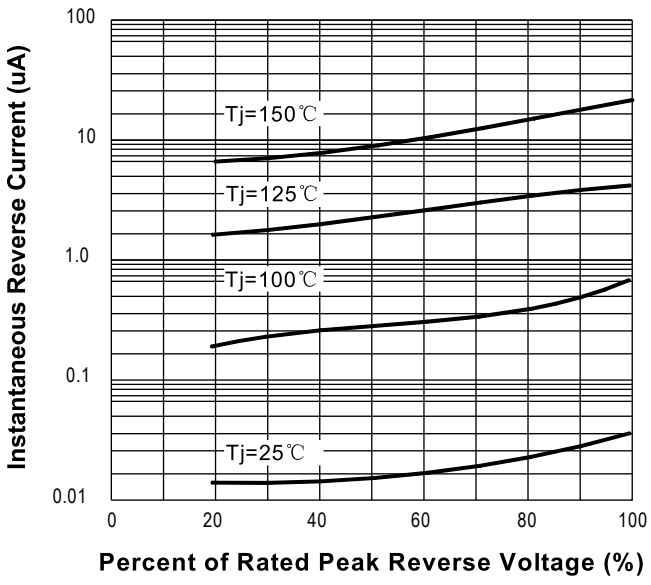


FIG.4: Instantaneous Reverse Characteristics



■ CHARACTERISTICS MUR1060CT (TYPICAL)

FIG1:Io -Tc Curve

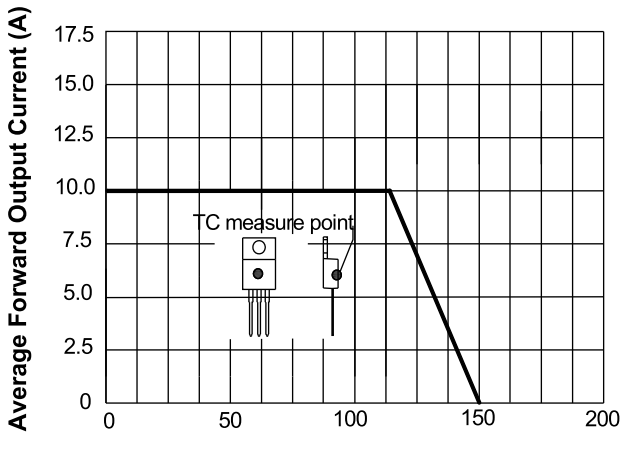


FIG2:Surge Forward Current Capability

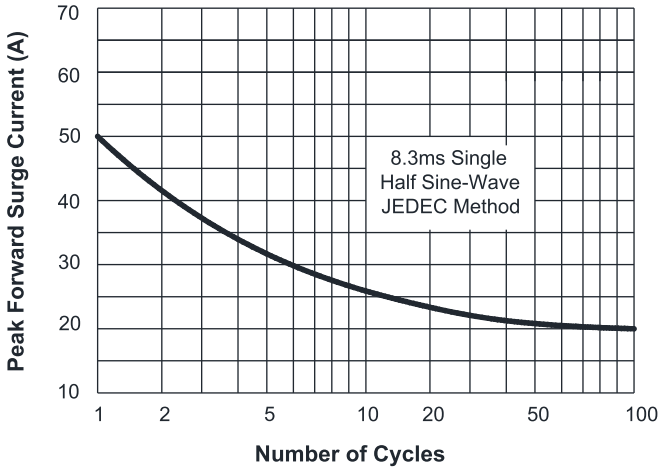


FIG3: Forward Voltage

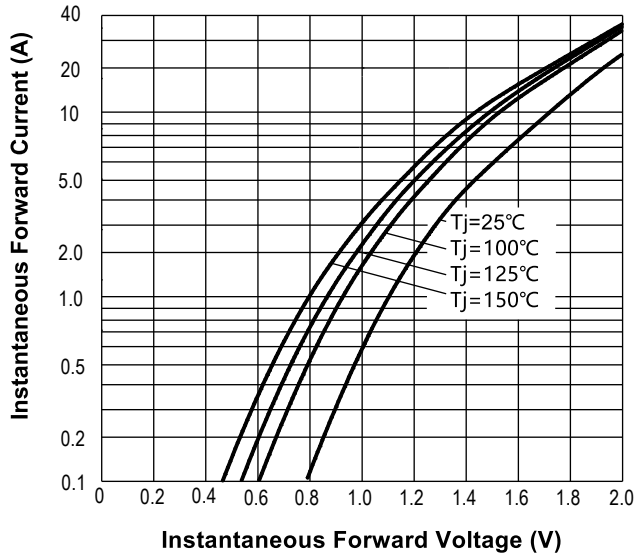
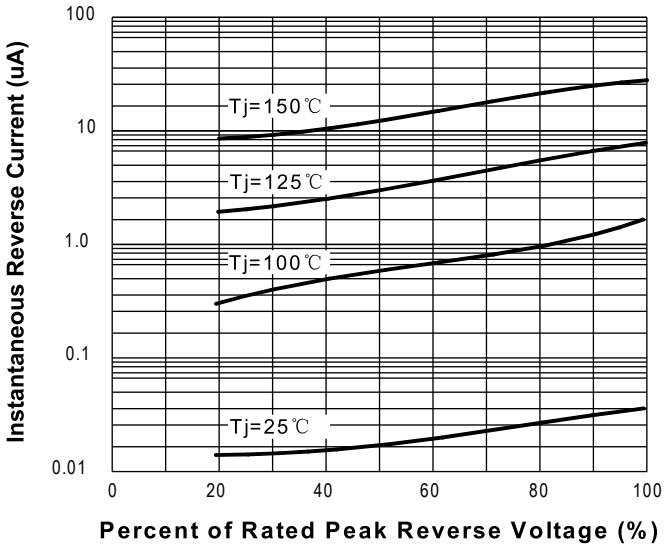
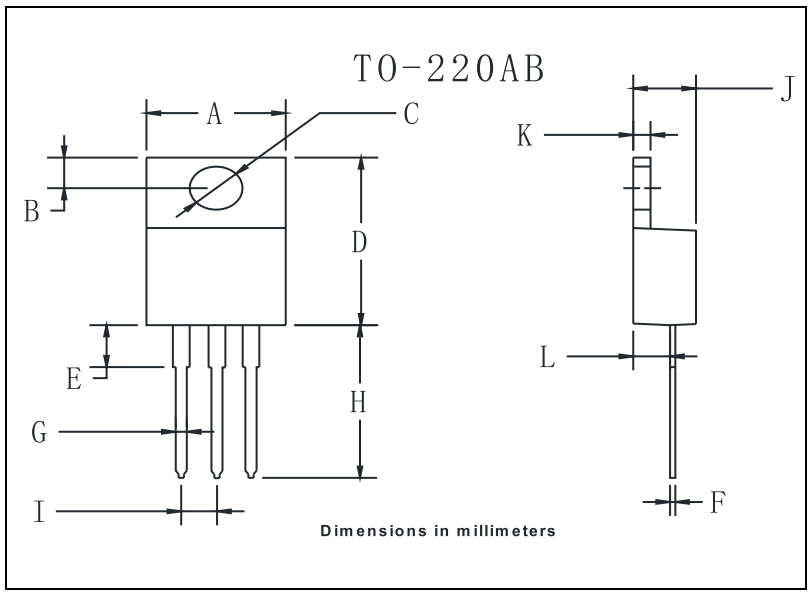


FIG.4: Instantaneous Reverse Characteristics



■ OUTLINE DIMENSIONS



TO-220AB		
Dim	Min	Max
A	9.95	10.35
B	2.55	2.95
C	3.8	4.0
D	14.95	15.25
E	3.75	4.25
F	0.26	0.5
G	0.68	0.94
H	13.4	13.9
I	2.35	2.65
J	4.38	4.78
K	1.14	1.4
L	2.37	2.79