

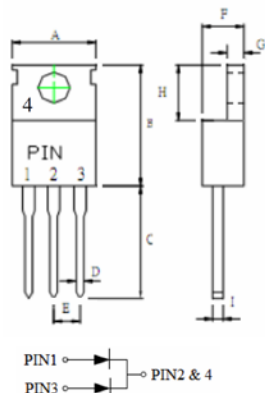


MBR10U45CT & MBR10U45FCT SPECIFICATION

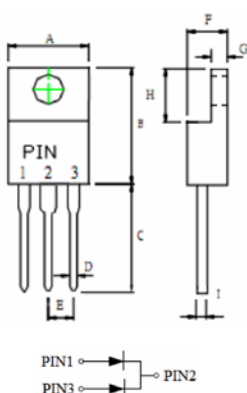
Rev. B

10A ULTRA LOW VF TRENCH MOS SCHOTTKY RECTIFIERS

TO-220AB (CLIP)



ITO-220AB (WIRE)



PACKAGE	TO-220AB	ITO-220AB
A	9.90~10.00	9.72~10.27
B	15.60~15.85	14.50~15.50
C	13.05~13.75	13.10~13.90
D	0.68~0.94	0.50~0.90
E	2.41~2.67	2.41~2.67
F	4.44~4.70	4.30~4.80
G	1.14~1.40	1.40~3.10
H	5.84~6.86	6.30~6.90
I	0.35~0.64	0.35~0.80
Ø	3.10~3.90	3.10~3.60

UNITS: MILLIMETERS

PRODUCT FEATURES

1. EXTREMELY LOW VF
2. TRENCH MOS SCHOTTKY TECHNOLOGY
3. LOW POWER LOSS / HIGH EFFICIENCY
4. HIGH FREQUENCY OPERATION
5. HIGH FORWARD SURGE CAPABILITY
6. HALOGEN FREE

MECHANICAL DATA

1. CASE: TRANSFER MOLDED
2. LEADS: SOLDERABLE PER MIL-STD-202, METHOD 208
3. POLARITY: AS MARKED
4. WEIGHT: 2.15 GRAMS (TO-220AB) / 1.55 GRAMS (ITO-220AB)
5. TERMINALS: PURETIN PLATED

PRIMARY CHARACTERISTIC	
I_O	2×5A
V_{RRM}	45V
I_{FSM}	125A
$V_F@5A, T_J=125^{\circ}C$	0.38V
T_{Jmax}	150°C

MAXIMUM RATINGS ($T_A=25^{\circ}C$ UNLESS OTHERWISE NOTED) AND ELECTRICAL CHARACTERISTICS

RATINGS	SYMBOL	MBR10U45CT	MBR10U45FCT	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	V_{RRM}	45		V
MAXIMUM RMS VOLTAGE	V_{RMS}	31.5		V
MAXIMUM DC BLOCKING VOLTAGE	V_{DC}	45		V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT (SEE FIG.1) PER LEG	I_O	10 5		A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD PER LEG	I_{FSM}	125		A
STORAGE TEMPERATURE RANGE	T_{STG}	- 55 ~ + 175		°C
OPERATING TEMPERATURE RANGE	T_J	- 55 ~ + 150		°C

CHARACTERISTICS	SYMBOL	MBR10U45CT	MBR10U45FCT	UNITS
MAXIMUM FORWARD VOLTAGE AT $I_F=5A, T_J=25^{\circ}C$ $T_J=125^{\circ}C$ AT $I_F=10A, T_J=25^{\circ}C$ $T_J=125^{\circ}C$	V_F	0.43 0.40 0.55 0.50		V
MAXIMUM REVERSE CURRENT AT 25°C PER LEG (NOTE1)	I_R	0.1		mA
MAXIMUM REVERSE CURRENT AT 125°C PER LEG (NOTE1)	I_R	15		mA

PARAMETER	SYMBOL	MBR10U45CT	MBR10U45FCT	UNITS
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta JC}$	2.2	4.0	°C/W
ISOLATION VOLTAGE (ITO-220AB ONLY) FROM TERMINAL TO HEATSINK $T=1MIN$	V_{AC}	/	1500	V

NOTE: 1. PULSE TEST: 300μS PULSE WIDTH, 1% DUTY CYCLE.



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RATINGS AND CHARACTERISTIC CURVE

FIG. 1-FORWARD CURRENT DERATING CURVE

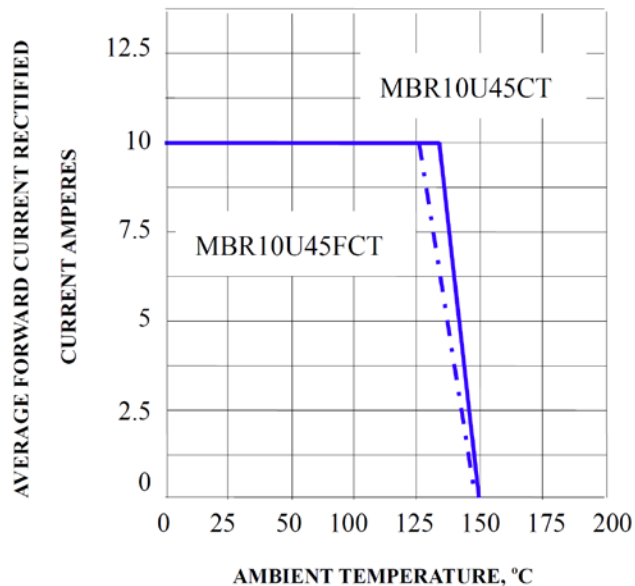


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE RATING

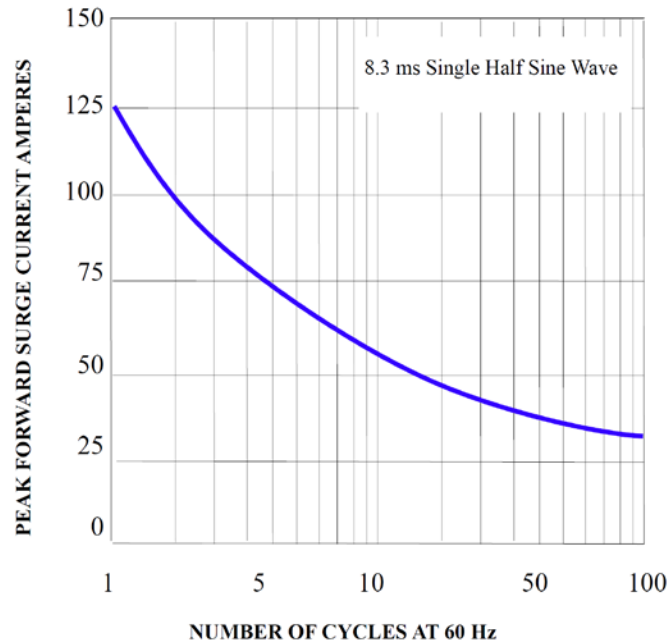


FIG. 3- TYPICAL REVERSE CHARACTERISTICS

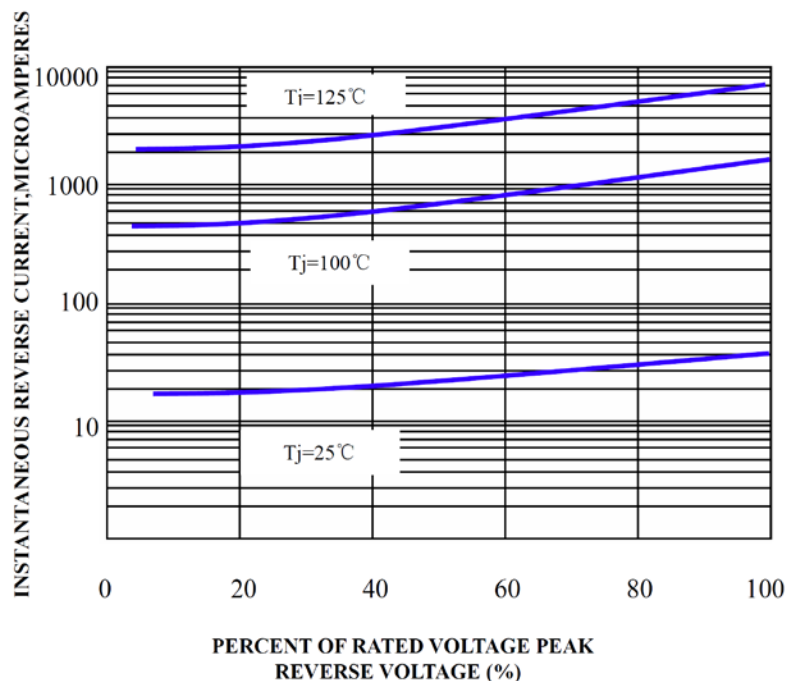
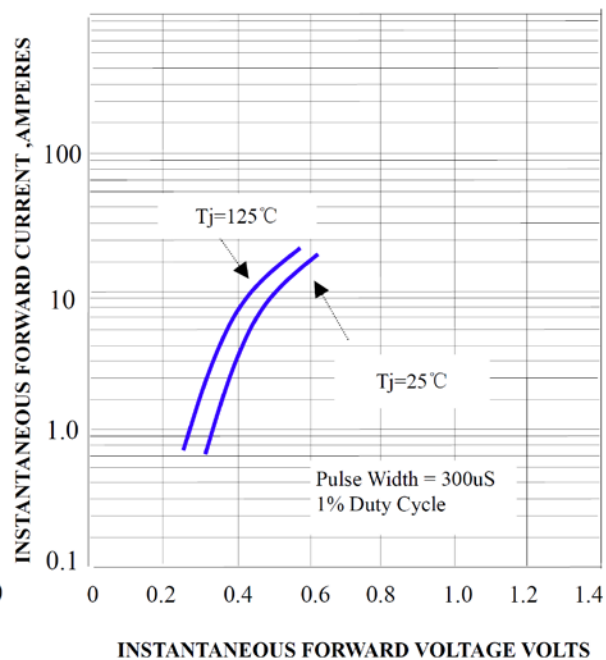


FIG. 4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

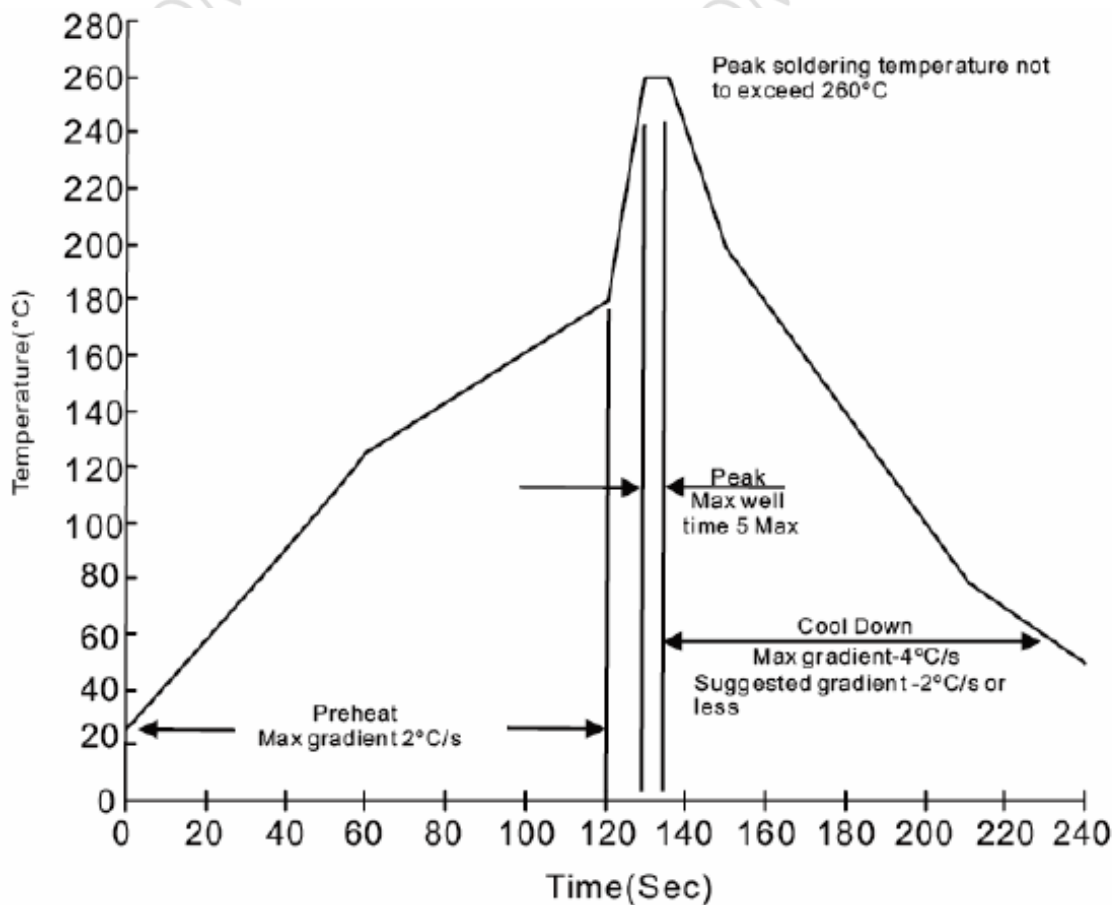




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SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES



TUBE PACKING

PACKAGE	TUBE (pcs)	TUBE SIZE	BOX (pcs)	INNER BOX (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AB ITO-220AB	50	525*32*7.5	2,000	545*142*78	560*300*174	8,000	23.5