

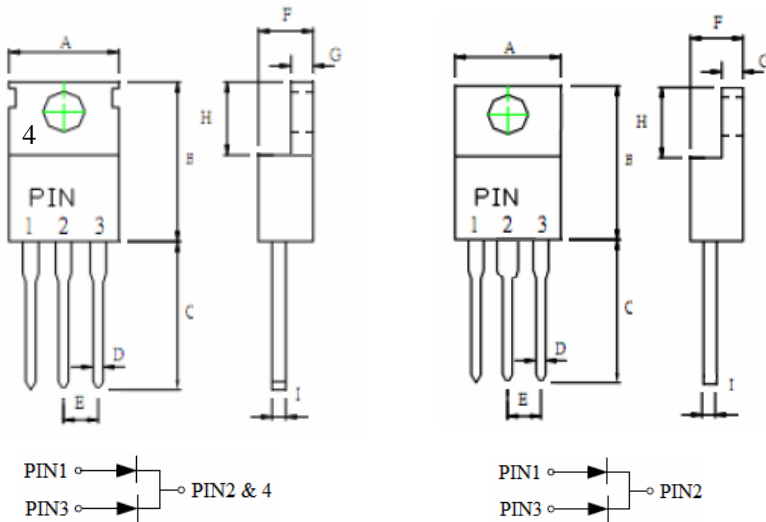
# 10A ULTRA LOW VF TRENCH MOS SCHOTTKY RECTIFIERS

# Formosa MS

## MBR10U45CT & MBR10U45FCT

TO-220AB (CLIP)

ITO-220AB (WIRE)



PACKAGE	TO-220AB	ITO-220AB
A	9.9~10.0	9.72~10.27
B	15.60~15.85	14.5~15.5
C	13.05~13.75	13.1~13.9
D	0.68~0.94	0.50~0.90
E	2.41~2.67	2.41~2.67
F	4.44~4.70	4.3~4.8
G	1.14~1.40	1.4~3.1
H	5.84~6.86	6.3~6.9
I	0.35~0.64	0.35~0.80
φ	3.1~3.9	3.1~3.6
UNITS	MILLIMETERS	

### FEATURES

- EXTREMELY LOW VF
- TRENCH MOS SCHOTTKY TECHNOLOGY
- LOW POWER LOSS / HIGH EFFICIENCY
- HIGH FREQUENCY OPERATION
- HALOGEN FREE
- HIGH FORWARD SURGE CAPABILITY

### MECHANICAL DATA

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

PRIMARY CHARACTERISTIC	
$I_O$	2X5A
$V_{RRM}$	45V
$I_{FSM}$	125A
<b><math>V_F@5A, T_J=125^\circ C</math></b>	<b>0.38V</b>
$T_{Jmax}$	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 TO + 175		°C
OPERATING JUNCTION TEMPERATURE RANGE	$T_J$	- 55 TO + 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 $I_F=10A$ $T_J=25^\circ C$ $T_J=125^\circ C$	VF	0.45 0.40 0.55 0.50		V
MAXIMUM REVERSE CURRENT AT 25°C PER LEG (NOTE 1)	$I_R$	0.1		mA
MAXIMUM REVERSE CURRENT AT 125°C PER LEG (NOTE 1)	$I_R$	15		mA
PARAMETER	SYMBOL	MBR10U45CT	MBR10U45FCT	UNITS
TYPICAL THERMAL RESISTANCE JUNCTION TO CASE PER LEG	$R_{\theta jc}$	2.2	4.0	°C/W
ISOLATION VOLTAGE(ITO-220AB ONLY)FROM TERMINAL TO HEATSINK T=1MIN	$V_{AC}$	/	1500	V

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



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RATINGS AND CHARACTERISTIC CURVES

FIG. 1-FORWARD CURRENT DERATING CURVE

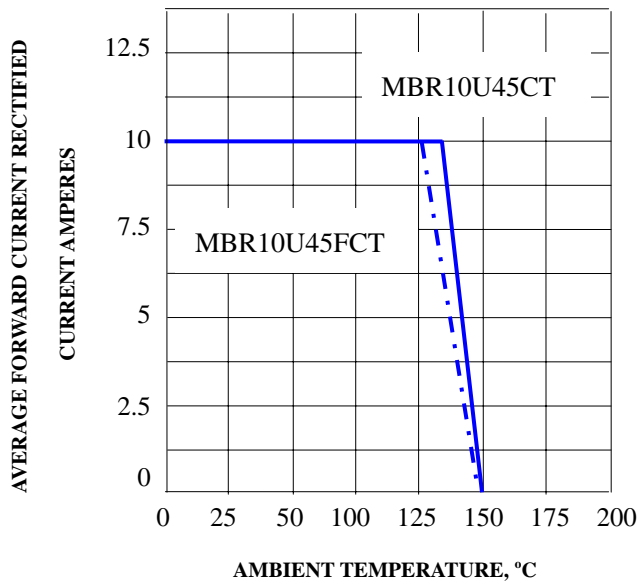


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE RATING

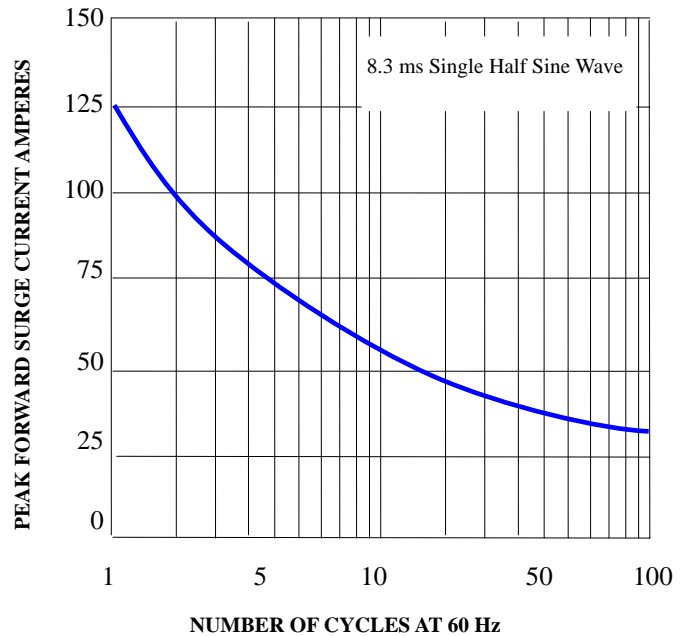


FIG. 3- TYPICAL REVERSE CHARACTERISTICS

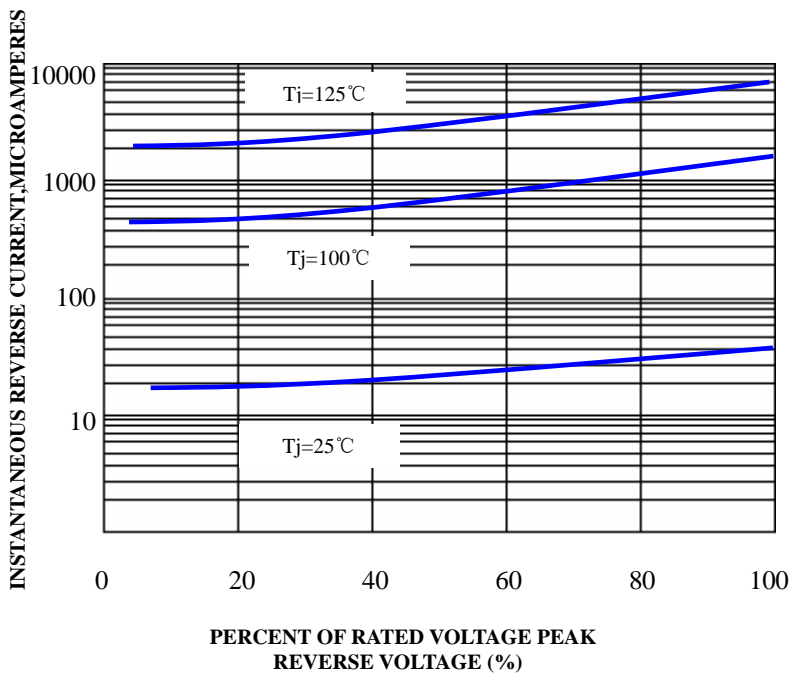
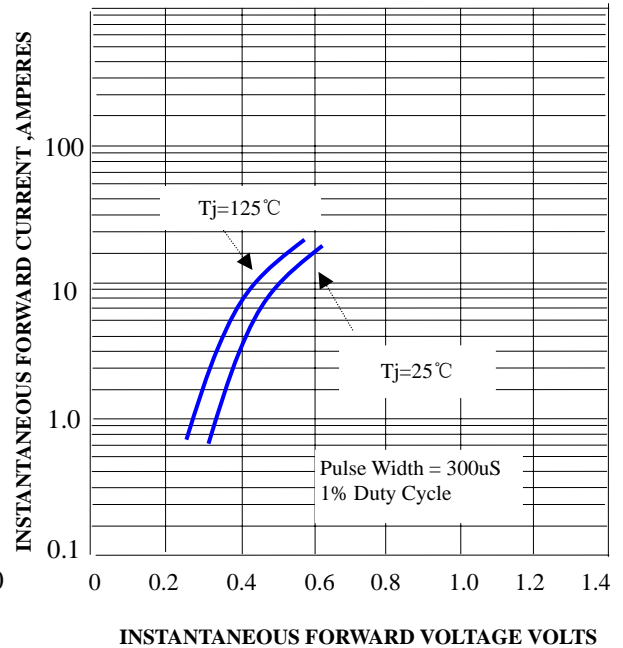
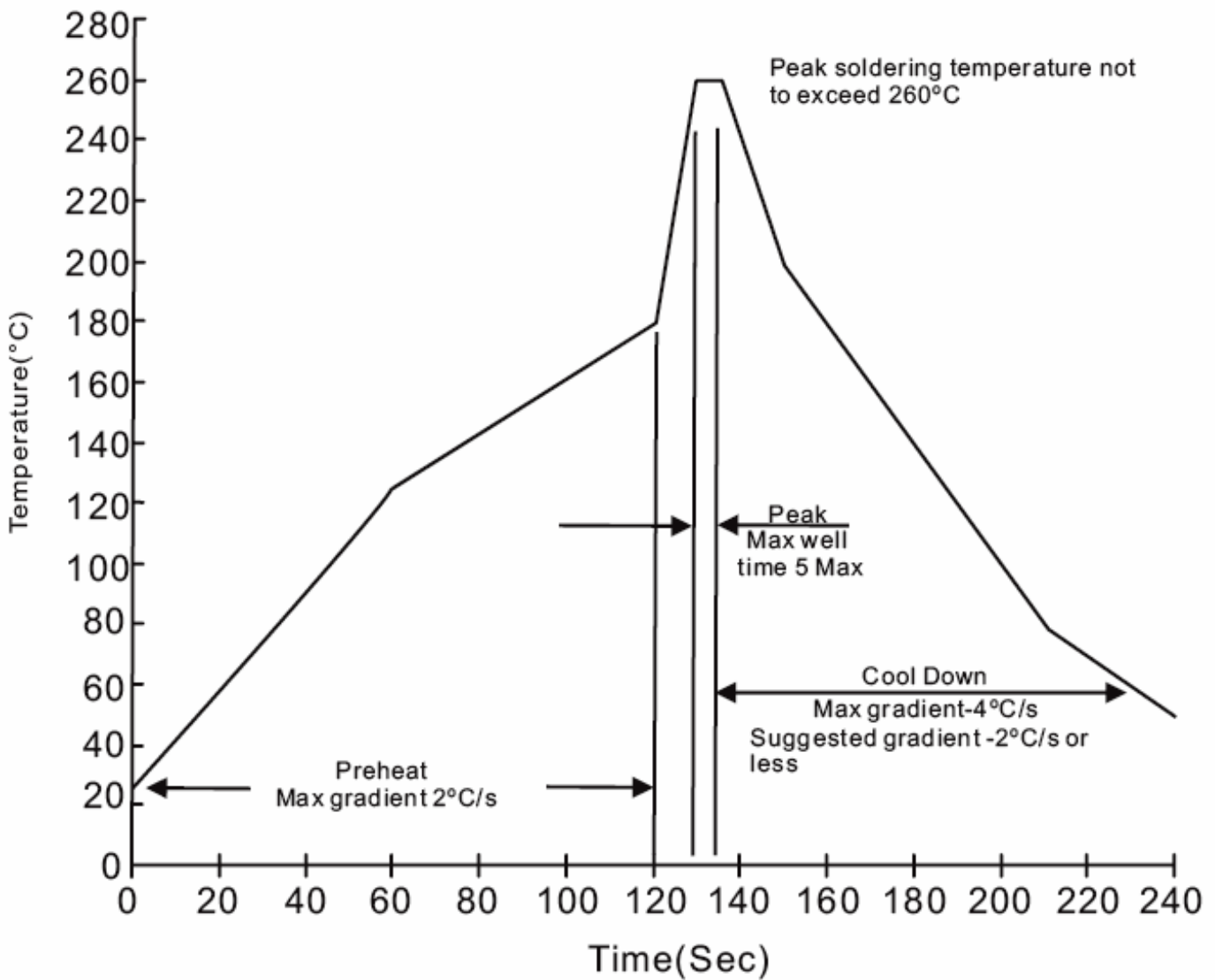


FIG. 4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



**SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES**

1. LEAD FREE TEMPERATURE PROFILE WAVE-SOLDERING



**TUBE PACKING**

PACKAGE	TUBE (pcs)	TUBE SIZE (mm)	BOX (pcs)	INNER BOX (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AB ITO-220AB	50	525*32*7.5	1,000	555*150*40	580*230*175	5,000	15