

# MBR40L60CT / MBR40L60FCT

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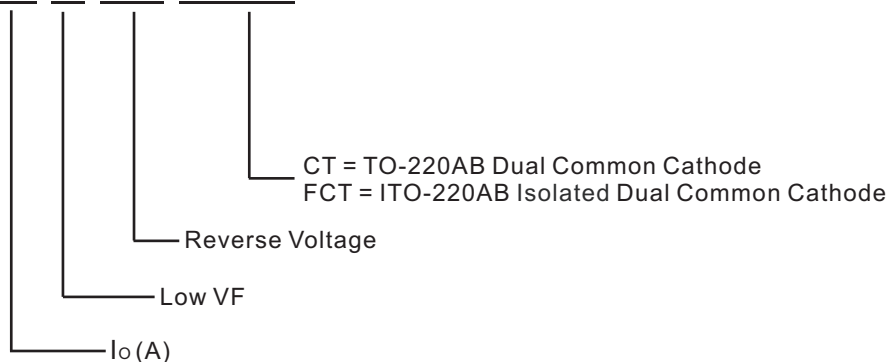
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### Part Nomenclature

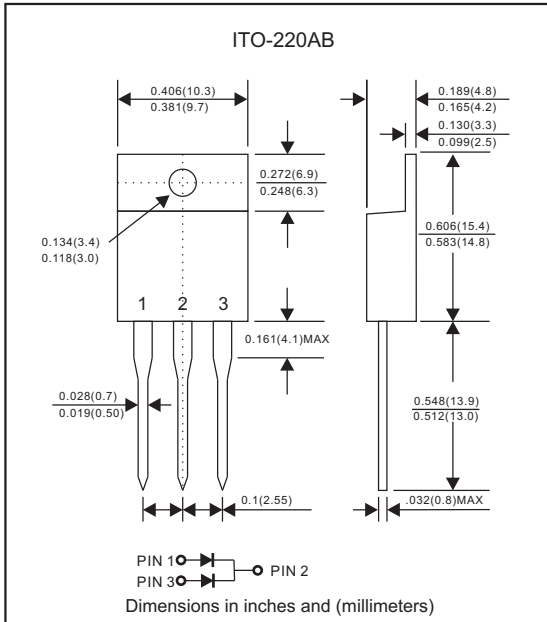
## MBR40 L 60 XXX



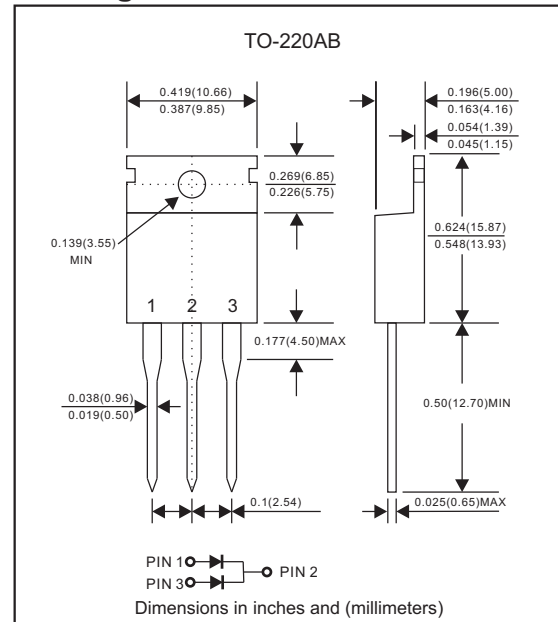
# MBR40L60CT / MBR40L60FCT

40A High Barrier Low VF Power Schottky Rectifiers - 60V

## Package outline



## Package outline



### Features

- High current density schottky.
- 150°C operating junction temperature.
- Offer 20A half wave and 40A full wave rectification.
- Low power loss, high efficiency.
- Low forward voltage drop.
- High current capability
- High surge capability.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free part, ex. MBR40L60CT-H.

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC ITO-220AB or TO-220AB molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guranteed
- Polarity: As marked
- Mounting Position : Any
- Weight : ITO-220AB Approximated 1.70 gram
- Weight : TO-220AB Approximated 2.10 gram

### Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	Symbol	MBR40L60CT	MBR40L60FCT	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	60	60	Volts
Maximum RMS voltage	$V_{RMS}$	42	42	Volts
Maximum DC blocking voltage	$V_{DC}$	60	60	Volts
Maximum average forward rectified current See Fig. 1	$I_O$	40	40	A
Peak forward surge current 8.3ms single half sine-wave	$I_{FSM}$	300	300	A
Operating junction temperature range	$T_J$	-65 to +150	-65 to +150	°C
Storage temperature range	$T_{STG}$	-65 to +150	-65 to +150	°C

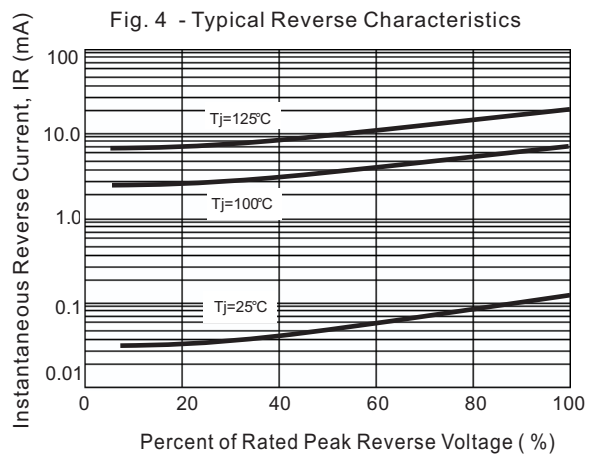
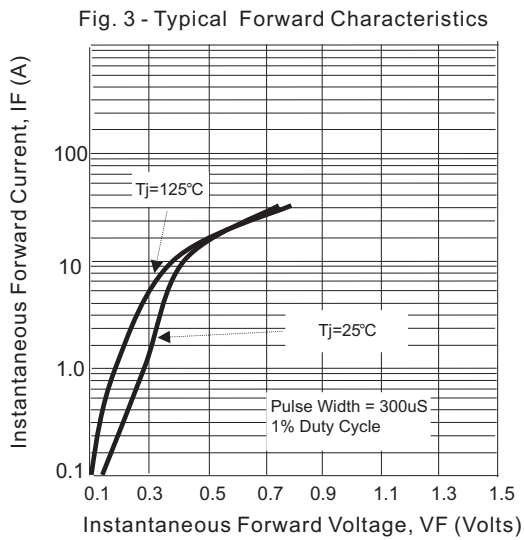
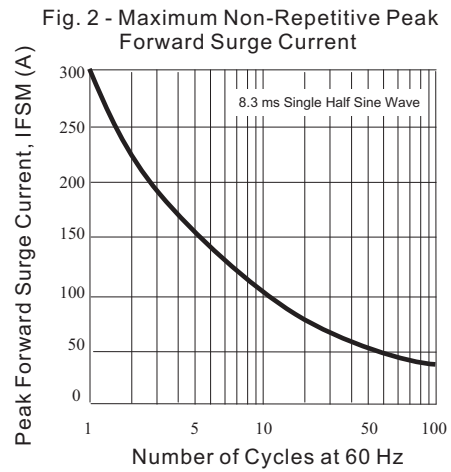
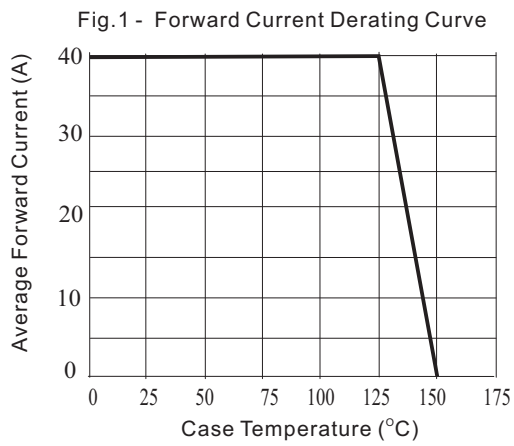
### Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	Symbol	MBR40L60CT	MBR40L60FCT	Unit
Maximum forward voltage per leg at $I_F=20\text{A}$ $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$ at $I_F=40\text{A}$ $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	$V_F$	0.55 0.53 0.78 0.75		Volts
Maximum reverse current at rated $V_{DC}$ per leg $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	$I_R$	0.25 50		mA

### Thermal characteristics

PARAMETER	Symbol	MBR40L60CT	MBR40L60FCT	Unit
Typical thermal resistance junction to case per leg	$R_{\theta JC}$	2.0	4.0	°C/W

## Rating and characteristic curves (MBR40L60CT / MBR40L60FCT)



# MBR40L60CT / MBR40L60FCT

## Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

## Marking

Type number	Marking code
MBR40L60CT	MBR40L60CT
MBR40L60FCT	MBR40L60FCT

## Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
ITO-220AB	50	525*32*7.0	1,000	555*150*40	580*230*175	5,000	15.0

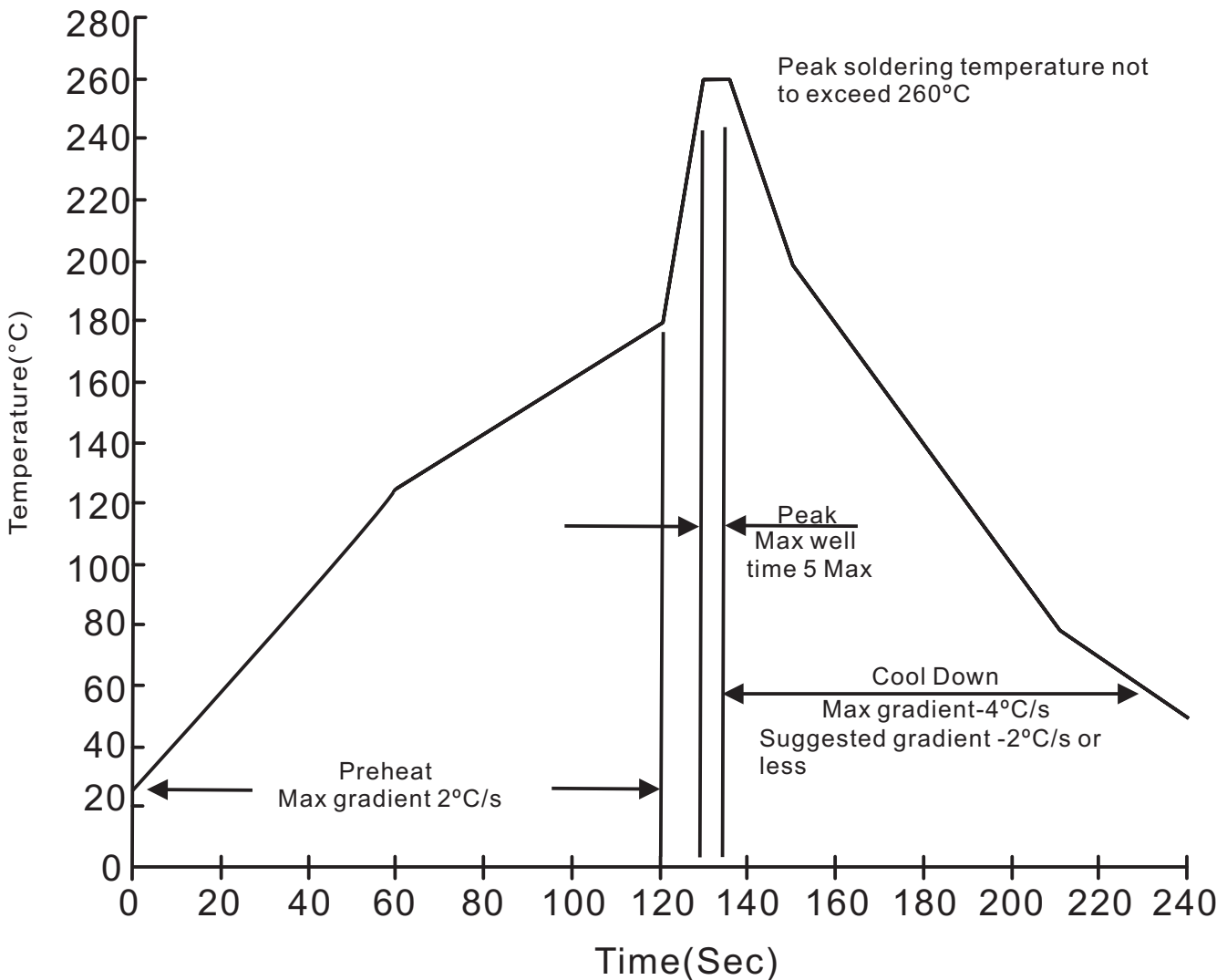
  

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AB	50	525*32*7.5	1,000	555*150*40	580*230*175	5,000	15.0

# MBR40L60CT / MBR40L60FCT

## Suggested thermal profiles for soldering processes

### 1. Lead free temperature profile wave-soldering



# MBR40L60CT / MBR40L60FCT

## High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=150^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A=25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$ , $I_F = I_o$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A=121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A=85^\circ\text{C}$ , RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031