SEMICONDUCTOR

MUR1560D2-V

AUTOMOTIVE POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

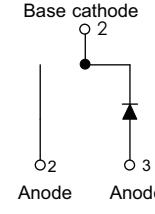
Reverse Voltage-600Volts
Forward Current:15.0Ampers

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low VF, Low power loss
- Polyimide passivation
- High surge capability
- Meets JESD 201 class 2 whisker test
- AEC-Q101 qualified and PPAP capable
- ESD Ratings:MM=C(>400V);HBM=3B(>8KV)
- High temperature soldering guaranteed:260℃/10s at terminals
- Component in accordance to RoHS 2011/65/EU

AEC-Q101 Qualified

TO-263AC
MUR1560D2-V



MECHANICAL DATA

- Case: JEDEC TO-263AC molded plastic body
- Terminals: Lead solderable per MIL-STD-750.method 2026
- Polarity: As marked
- Mounting Position: Any
- weight: 2.24g(Approx.)

CASE:TO-263AC
Marking:
JF=Logo
Y=Year
W=Work Week
S=Chip Size
MUR1560D2-V=Device Code
V=For Automible

TYPICAL APPLICATIONS

- For use in boost stage in SMPS
- High frequency inverters for solar inverters
- DC/DC converters
- High frequency output rectification of battery chargers
- Free wheeling diodes in motor drivers

MAXIMUM RATINGS

(Ratings at 25℃ ambient temperature unless otherwise specified)

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum average forward rectified current	$I_{F(AV)}$	15.0	A
Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (JEDEC method,Total device)	I_{FSM}	150	A
Operating junction temperature range	T_J	-65 to 175	℃
Storge temperature range	Tstg	-65 to 175	℃

RATINGS AND CHARACTERISTICS OF MUR1560D2-V

ELECTRICAL CHARACTERISTCS(T_A=25℃ Unless otherwise noted)

Parameters	Test Conditions		Symbol	Min.	Typ.	Max.	Units
Breakdown voltage Blocking voltage	I_R=200μA		V_{BR} V_R	600	–	–	V
Instaneous forward voltage	T_J=25℃	I_F=1.0A	V_F 1)	–	0.84	–	V
		I_F=5.0A		–	1.12	–	
		I_F=15.0A		–	1.30	1.70	
	T_J=125℃	I_F=1.0A		–	0.63	–	
		I_F=5.0A		–	0.87	–	
		I_F=15.0A		–	1.10	–	
Reverse current	T_J=25℃	V_R=600V	I_R 2)	–	–	5	μA
	T_J=125℃			–	–	50	μA
	T_J=150℃			–	–	250	
Junction capacitance	4V,1MHz		C_J	–	106	–	pF

Notes: 1.Pulse Test:300μS pulse width,1% duty cycle

2.Pulse test:pulse width≤40ms

DYNAMIC RECOVERY CHARACTERISTCS（T_J=25℃）

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	I_F=0.5A,I_R=1A,I_{RR}=0.25A	trr	–	30	40	ns

RATINGS AND CHARACTERISTICS OF MUR1560D2-V

THERMAL CHARACTERISTICS

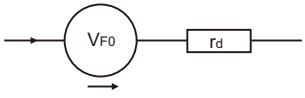
Parameter	Symbol	TO-263AC	Unit
Typical thermal resistance 3)	$R_{\theta JC}$	2.5	℃/W

3. Thermal resistance from junction to case

AVAILABLE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton Size L×W×H(mm)	Quantity(box/carton)
MUR1560D2-V TO-263AC	P/T	558×148×38	1000	565×225×170	5

Equivalent circuits for forward power loss calculation



V_{F0}: threshold voltage 1.05V

r_d: Dynamic resistance 0.025Ω

Forward power loss of diode=$V_{F0} \times I_{F(AV)} + r_d \times I^2_{F(RMS)}$

FIG.1-FORWARD CURRENT DERATING CURVE

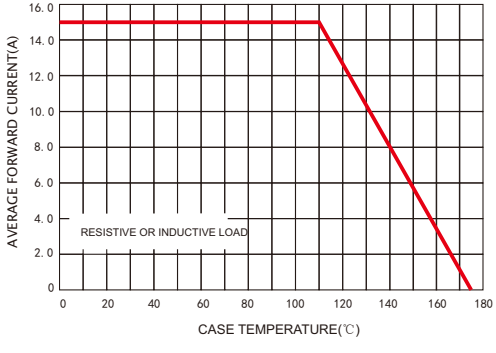
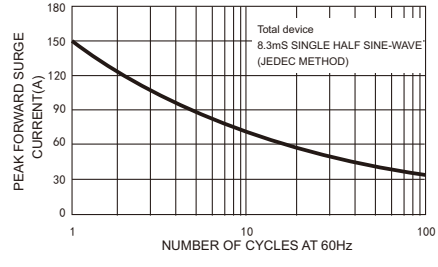


FIG2.-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



RATINGS AND CHARACTERISTICS OF MUR1560D2-V

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

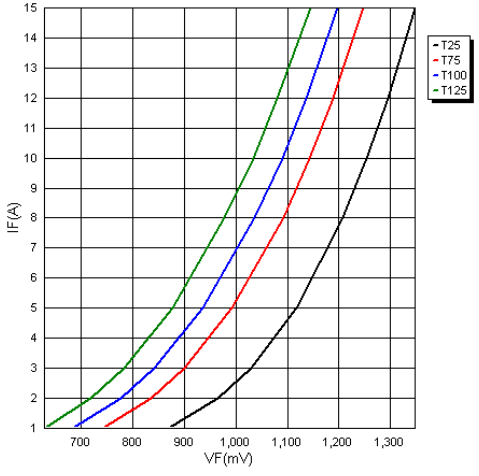


FIG.4-TYPICAL REVERSE CHARACTERISTICS

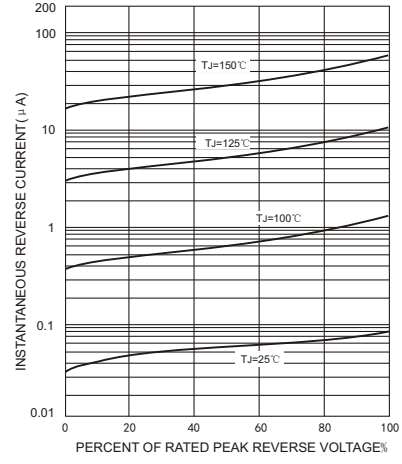
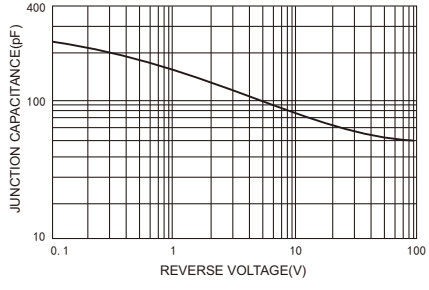
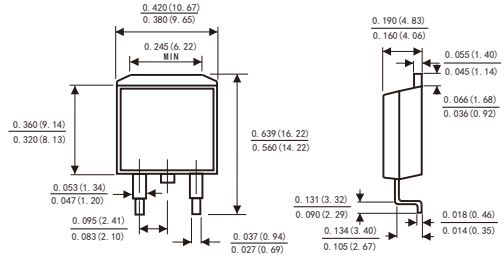


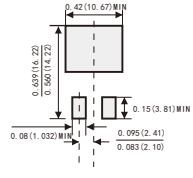
FIG.5-TYPICAL JUNCTION CAPACITANCE



TO-263AC



Suggested Pad Layout



Dimensions in inches and (millimeters)