

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 Rating:MM=C(> 400V) ;HBM=3B(> 8KV)
- High temperature soldering guaranteed:260℃/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU

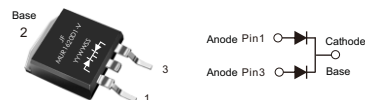


AEC-Q101 Qualified

TO-263

MECHANICAL DATA

- Case: JEDEC TO-263(D²PAK) molded plastic body
- Terminals: Lead solderable per MIL-STD-750,method 2026
- Polarity: As marked
- Mounting Position: Any
- Weight: 1.5 Grams(Approximately)



CASE:TO-263(D²PAK)

MARKING:

JF =Logo

Y =Year

W =Work Week

S =Chip Size

MUR1620CT-V =Device code

V =For Automobile

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)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current	$I_{F(AV)}$	Per Leg:8.0 Total:16.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method ,Per Leg)	I_{FSM}	100	A
Operating junction temperature range	T_J	-65 to+175	℃
Storage temperature range	T_{stg}	-65 to+175	℃

RATINGS AND CHARACTERISTIC OF MUR1620D1-V

ELECTRICAL CHARACTERISTCS (TA=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	IR=200μA		V _{BR} V _R	200	—	—	V
Instaneous forward voltage	T _J =25℃	IF=1.0A	V _F ¹⁾	—	0.75	—	V
		IF=3.0A		—	0.83	—	
		IF=8.0A		—	0.93	0.975	
	T _J =125℃	IF=1.0A		—	0.63	—	
		IF=3.0A		—	0.71	—	
		IF=8.0A		—	0.81	—	
Reverse current	T _J =25℃	V _R =200V	I _R ²⁾	—	—	5	μ A
	T _J =125℃			—	—	50	μ A
	T _J =150℃			—	—	250	
Junction capacitance	4V,1MHz		C _J	—	54	—	pF

Notes: 1.Pulse test: 300 μ s pulse width,1% duty cycle

2.Pulse test: pulse width≤40ms

DYNAMIC RECOVERY CHARACTERISTCS (TJ=25℃)

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse recovery time	IF=0.5A,IR=1A,I _{RR} =0.25A	trr	—	—	25	ns

RATINGS AND CHARACTERISTIC OF MUR1620D1-V

THERMAL CHARACTERISTICS

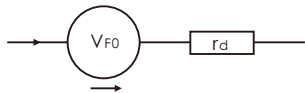
Parameter	Symbol	TO-263	Unit
Typical thermal resistance ³⁾	R θ Jc	2.5	°C/W

3.Thermal resistance from junction to case

AVAILABALE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity (pcs/box)	Carton SizeL×W×H(mm)	Quantity (box/carton)
MUR1620D1-V-TO-263	P/T	558×148×38	1000	565×225×170	5

Equivalent circuits for forward power loss calculation



V_{F0}: threshold voltage 0.63V
r_d: Dynamic resistance 0.016Ω
Forward power loss of diode=V_{F0}×I_F(AV) +r_d×I_F(RMS)²

FIG.1-FORWARD CURRENT DERATING CURVE

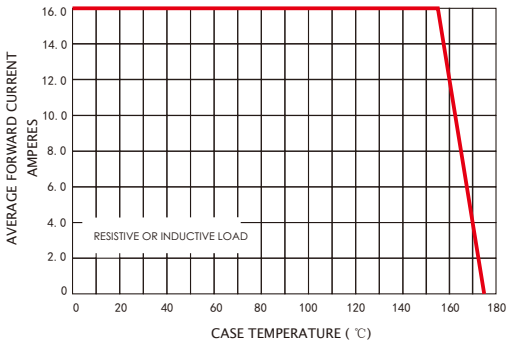
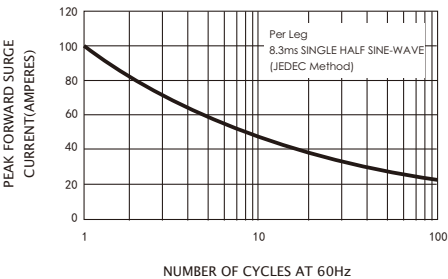


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



RATINGS AND CHARACTERISTIC OF MUR1620D1-V

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

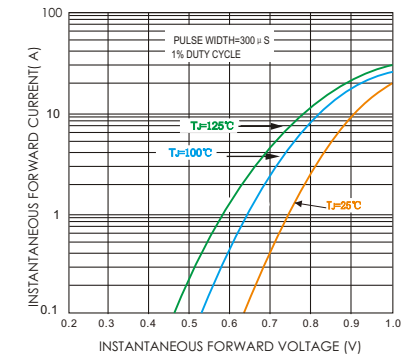


FIG.4-TYPICAL REVERSE CHARACTERISTICS

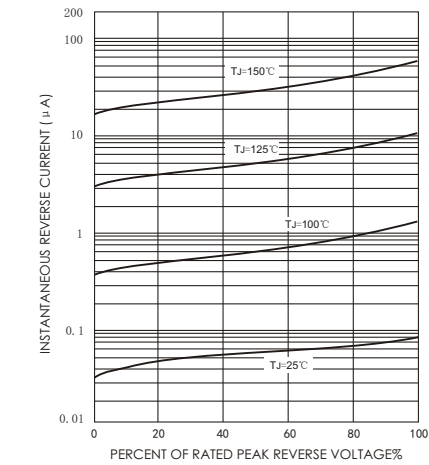


FIG.5-TYPICAL JUNCTION CAPACITANCE

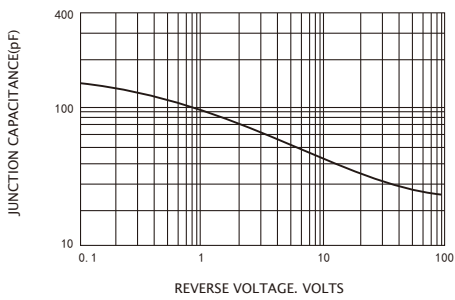
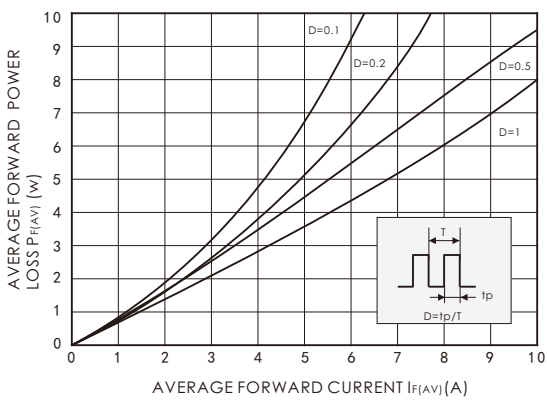
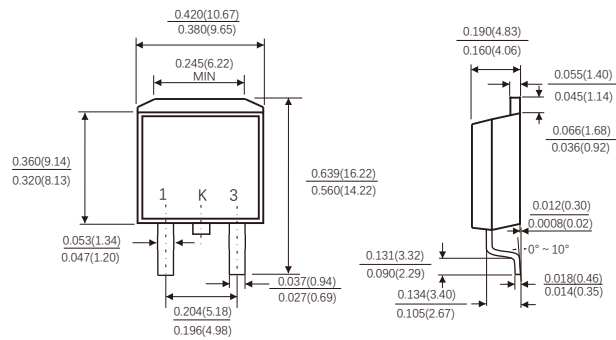


FIG.6-AVERAGE FORWARD POWER LOSS VS AVERAGE FORWARD CURRENT (per diode)



PACKAGE OUTLINE DIMENSIONS

TO-263



Suggested Pad Layout

