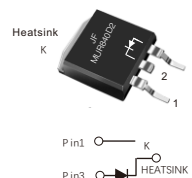


Features

- 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
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU



TO-263 (D²PAK)
MUR840D2



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

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

PRIMARY CHARACTERISTICS	
I _{F(AV)}	8.0A
V _R	400V
I _{FSM}	90A
V _F at I _F =8.0A,125°C	0.97V
T _{rr typ}	35ns
T _{JMAX}	175°C

Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	400	V
Maximum average forward rectified current,D=0.5, Square waveform,T _c ≤150°C (see Fig.1)	I _{F(AV)}	8.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T _J)	I _{FSM}	90	A
Operating junction temperature range	T _J	-55 to+175	°C
Storage temperature range	T _{stg}	-55 to+175	°C

Electrical Characteristics (T_J=25°C Unless Otherwise Noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I _R =200μA		V _{BR} V _R	400	-	-	V
Instaneous forward voltage	T _J =25°C	I _F =3.0A	V _F ¹⁾	-	0.94	-	V
		I _F =8.0A		-	1.10	1.30	
	T _J =125°C	I _F =3.0A		-	0.80	-	
		I _F =8.0A		-	0.97	1.17	
Reverse current	T _J =25°C	V _R =400V	I _R ²⁾	-	0.1	5	μA
	T _J =125°C			-	-	250	
Junction capacitance	4V,1MHz		C _J	-	36	-	pF

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

2.Pulse test: pulse width ≤40ms

 Dynamic Recovery Characteristics (T_J=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max .	Unit
Reverse recovery time	I _F =1.0A,dI _F /dt=100A/μs,V _R =30V		trr	-	21	35	ns
	T _J =25°C	I _F =8A dI _F /dt=100A/μS V _R =200V		-	48	-	
	T _J =125°C			-	56	-	
Peak recovery current	T _J =25°C	I _F =8A dI _F /dt=100A/μS V _R =200V	I _{RRM}	-	3.0	-	A
	T _J =125°C			-	7.0	-	
Reverse recovery charge	T _J =25°C	I _F =8A dI _F /dt=100A/μS V _R =200V	Q _{rr}	-	58	-	nC
	T _J =125°C			-	200	-	

Thermal Characteristics

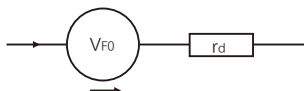
Parameter	Symbol	TO-263	Unit
Typical thermal resistance ³⁾	$R\theta_{jc}$	2.5	°C/W

3.Thermal resistance from junction to case

Available Pack Information

Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Tube Length (mm)	Inner Box Number	Tube Number Per A Inner Box	Part Number Per A Tube	Quantity(carton) (K)
MUR840D2-TO-263	Tube	565×225×170	548×151×37	538	5	20	50	5
Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Reel Diameter (mm)	Inner Box Number	Reel Number Per A Inner Box	Part Number Per A Reel	Quantity(carton) (K)
MUR840D2-TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

Equivalent circuits for forward power loss calculation



V_{f0} : threshold voltage 0.75V

r_d : Dynamic resistance 0.018Ω

Forward power loss of diode = $V_{f0} \times I_{F(AV)} + r_d \times I_{F(RMS)}^2$

Fig.1-Forward Current Derating Curve

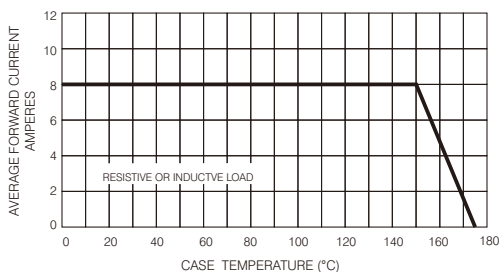


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

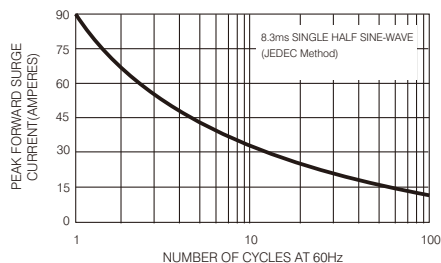


Fig.3-Typical Instantaneous Forward Characteristics

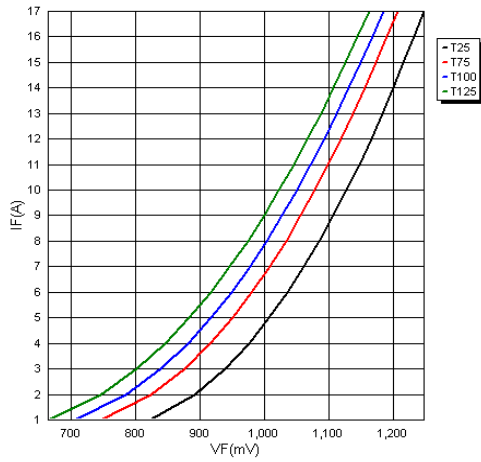


Fig.4-Typical Reverse Characteristics

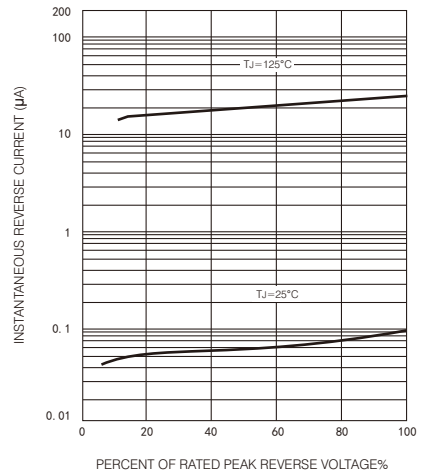
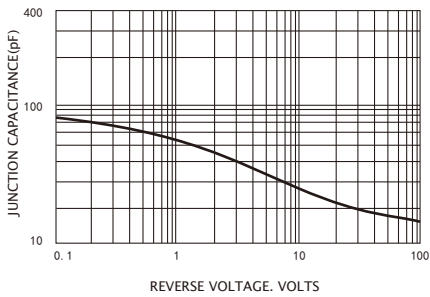
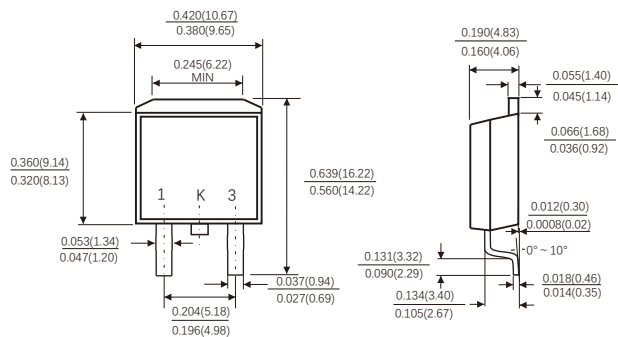


Fig.5-Typical Junction Capacitance

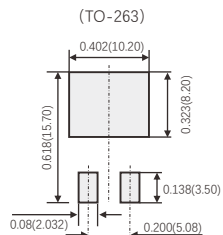


Dimensions in inches and (millimeters)

TO-263



Suggested Pad Layout



(设计者可参考推荐值根据焊接工艺要求自行确定适合的焊盘尺寸)
(Designers can refer to the recommended values according to the manufacturing process requirements to determine the appropriate pad size)

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