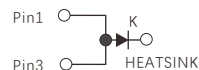
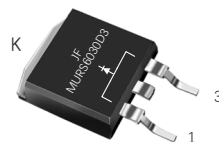


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low VF ,Low power loss
- Polyimide passivation
- Very short recovery time and low Irrm
- Soft recovery behaviour for low EMI/RFI
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU

TO-263(D²PAK)



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	
IF(AV)	60.0A
VR	600V
IFSM	550A
VF at IF=60.0A,25°C	1.25V
Trr typ	30ns
TJMAX	175°C

Maximum Ratings

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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	VRRM	300	V
Maximum average forward rectified current, Rectangular wave, D=0.5, Tc=135°C	IF(AV)	60	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TI)	IFSM	550	A
Operating junction temperature range	TJ	-55 to+175	°C
Storage temperature range	Tstg	-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	IR=200μA		VBR VR	300	-	-	V
Instaneous forward voltage	Tj=25°C	IF=60A	VF ¹⁾	-	1.25	1.43	V
		IF=120A		-	-	1.78	
	Tj=150°C	IF=60A		-	-	1.14	
		IF=120A		-	-	1.53	
Reverse current	Tj=25°C	VR=300V	IR ²⁾	-	-	1	μA
	Tj=150°C			-	-	350	
Junction capacitance	4V,1MHz		CJ	-	260	-	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 =0.5A,I _R =1.0A, I _{rr} =0.25A		t _{rr}	-	40	55	ns
	T _J =25°C	I _F =60A dI _F /dt=200A/μS V _R =200V		-	35	-	
	T _J =125°C			-	65	-	
Peak recovery current	T _J =25°C		I _{RRM}	-	3.5	-	A
	T _J =125°C			-	9.1	-	
Reverse recovery charge	T _J =25°C		Q _{rr}	-	86	-	nC
	T _J =125°C	-		320	-		

Thermal Characteristics

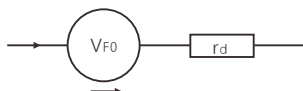
Parameter	Symbol	TO-263	Unit
Typical thermal resistance ³⁾	$R_{\theta jc}$	0.45	°C/W

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)
MURS6030D3-TO-263	P/T	558×148×38	1000	565×225×170	5

Equivalent circuits for power loss calculation



V_{F0} : threshold voltage 0.69V

r_d : Dynamic resistance 0.0064Ω

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

FIG.1-FORWARD CURRENT DERATING CURVE

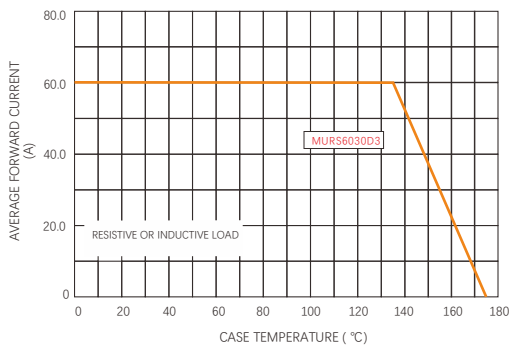


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

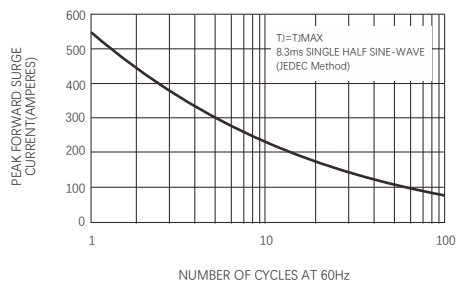


Fig.3-typical Instantaneous Forward Characteristics

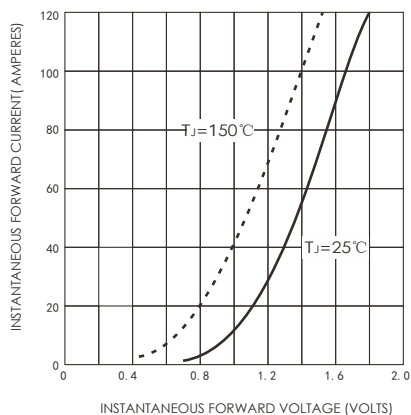
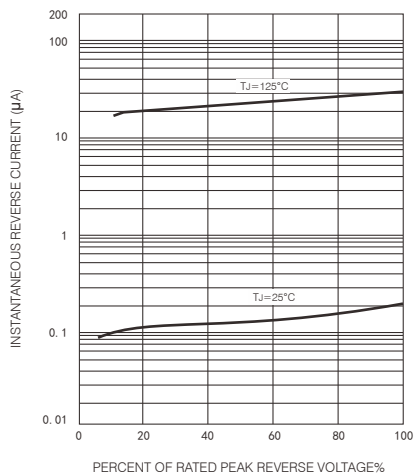
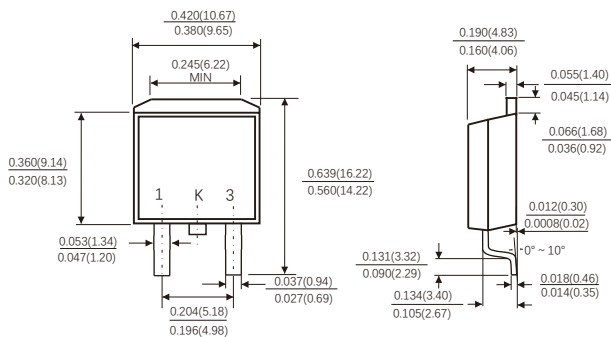


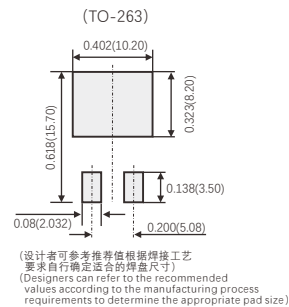
Fig.4-Typical Reverse Characteristics



TO-263



Suggested Pad Layout



Dimensions in inches and (millimeters)

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