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台舟电子

MUR2040K3
MUR2040W3
Fast Rectifiers

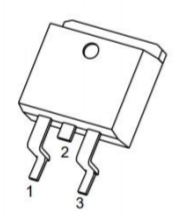
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Features

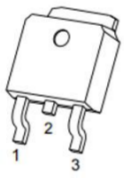
- Low cost
- Low leakage
- Low forward voltage drop
- High current capability
- RoHs Product

Applications

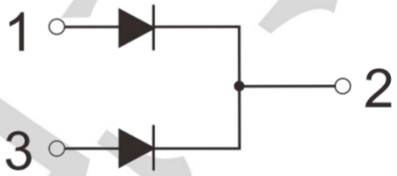
- Freewheeling diodes
- Polarity protection application
- DC-DC converters
- High frequency rectifier of switching mode power supplies



TO-263



TO-252



Corresponding packaging

Part Number	Package
MUR2040K3	TO-252
MUR2040W3	TO-263

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
Maximum RMS voltage	V_{RMS}	280	V
DC Blocking Voltage	V_{DC}	400	V
Maximum Average Forward Output Current	$I_{F(AV)}$	20	A
Peak Forward Surge Current (8.3ms single half sine-wave, per leg)	I_{FSM}	100	A
Peak Forward Surge Current (8.3ms single half sine-wave, per device)		200	A
Operating Junction Temperature Range	T_J	−55 to +175	°C
Storage Temperature Range	T_{STG}	−55 to +175	°C
Thermal Resistance Junction-to-Case (TO-252) *1	$R_{\theta JC}$	4.0	°C/W
Thermal Resistance Junction-to-Case (TO-263) *1		2.5	°C/W

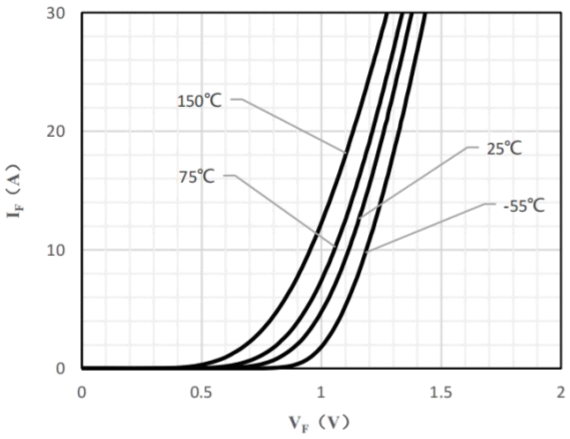
Note 1: The data tested by surface mounted on a 1 inch$_2$ FR-4 board with 2OZ copper

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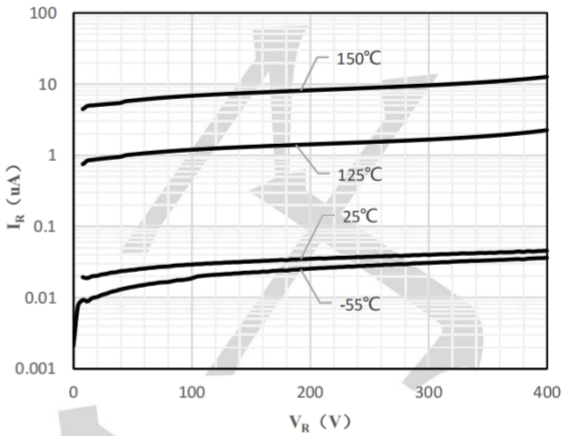
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	I_R = 100μA	400	--	--	V
Forward Voltage	V_F	I_F = 10A, T_J = 25°C	--	--	1.3	V
		I_F = 10A, T_J = 150°C	--	--	1.1	V
Maximum Peak Reverse Current	I_R	V_R = V_{RRM}, T_J = 25°C	--	--	10	uA
		V_R = V_{RRM}, T_J = 150°C	--	--	500	uA
Junction Capacitance	C_J	V_R = 0V, f = 1MHz	--	119	--	PF
		V_R = 400V, f = 1MHz	--	12	--	PF
Reverse Recovery Time	t_{rr}	I_F = 0.5A, I_{rr} = 0.25A, I_R = 1A	--	--	50	ns
		I_F = 1A, V_R = 30V dI_F/dt = 100A / μs T_J = 25°C	--	31	--	ns
Reverse Recovery Charge	Q_{rr}		--	32	--	nC
Peak Recovery Current	I_{rr}		--	2	--	A
Reverse Recovery Time	t_{rr}	I_F = 1A, V_R = 30V dI_F/dt = 200A / μs T_J = 25°C	--	25	--	ns
Reverse Recovery Charge	Q_{rr}		--	36	--	nC
Peak Recovery Current	I_{rr}		--	28.9	--	A
Reverse Recovery Time	t_{rr}	I_F = 10A, V_R = 400V dI_F/dt = 200A / μs T_J = 25°C	--	62	--	ns
Reverse Recovery Charge	Q_{rr}		--	162	--	nC
Peak Recovery Current	I_{rr}		--	5.14	--	A

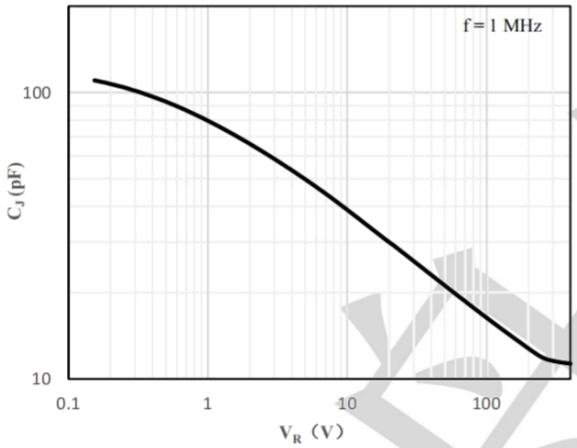
Typical Electrical Characteristic Curves



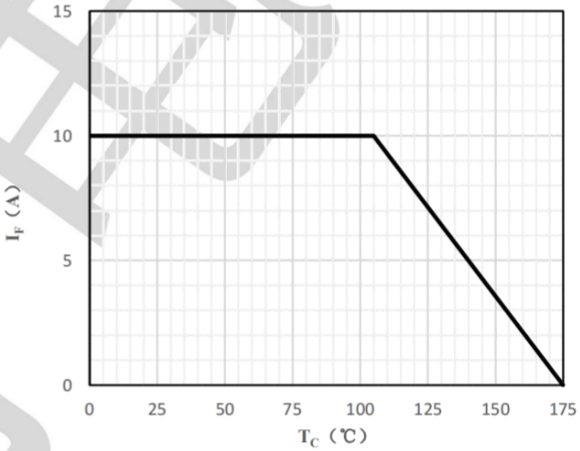
Typical Forward Characteristic



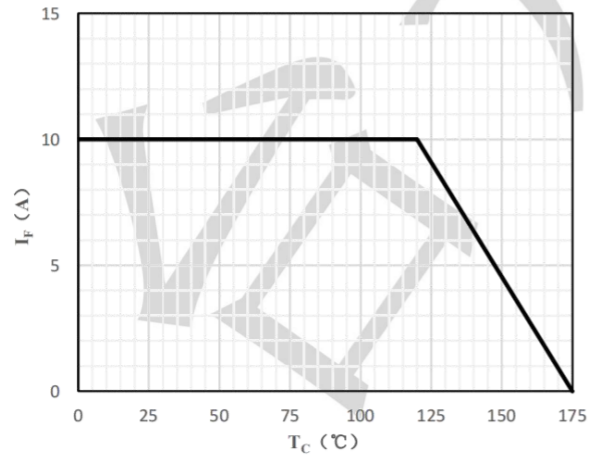
Typical Reverse Characteristic



Typical Capacitance Characteristic



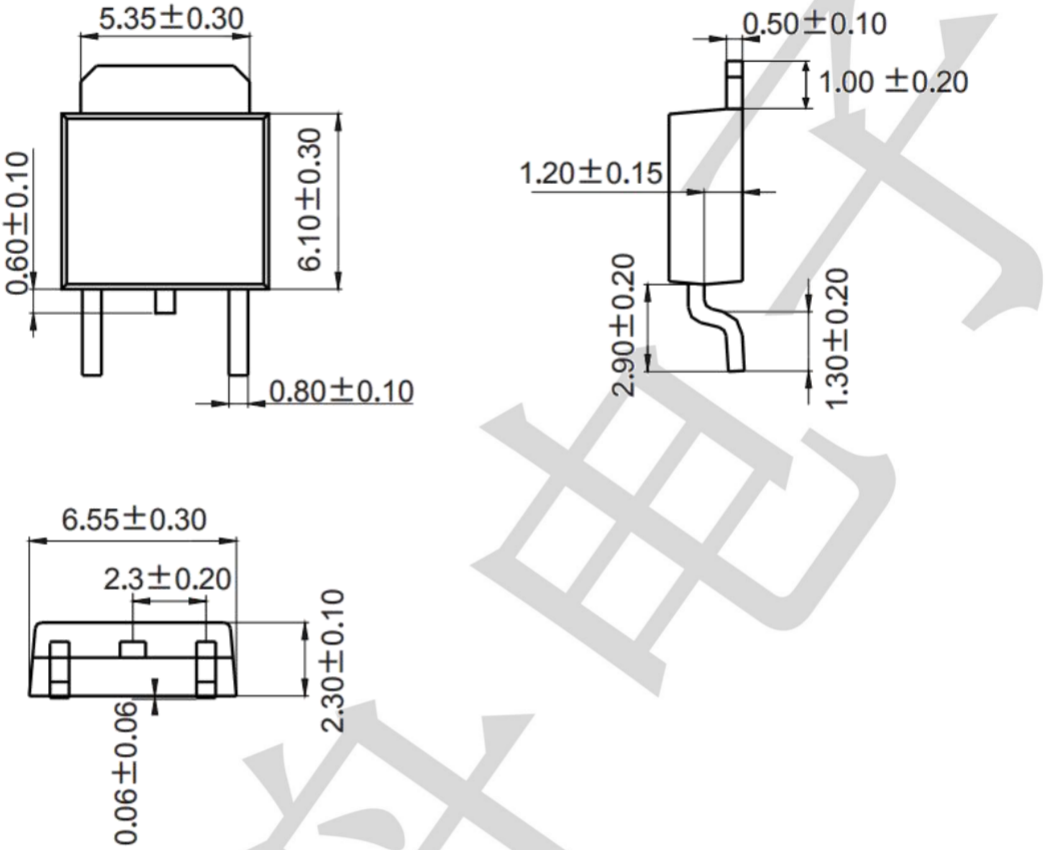
Current Derating Curve (TO-252)



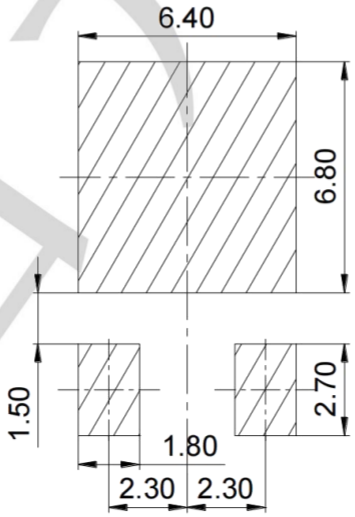
Current Derating Curve (TO-263)

Package Outline Dimensions (unit: mm)

TO-252

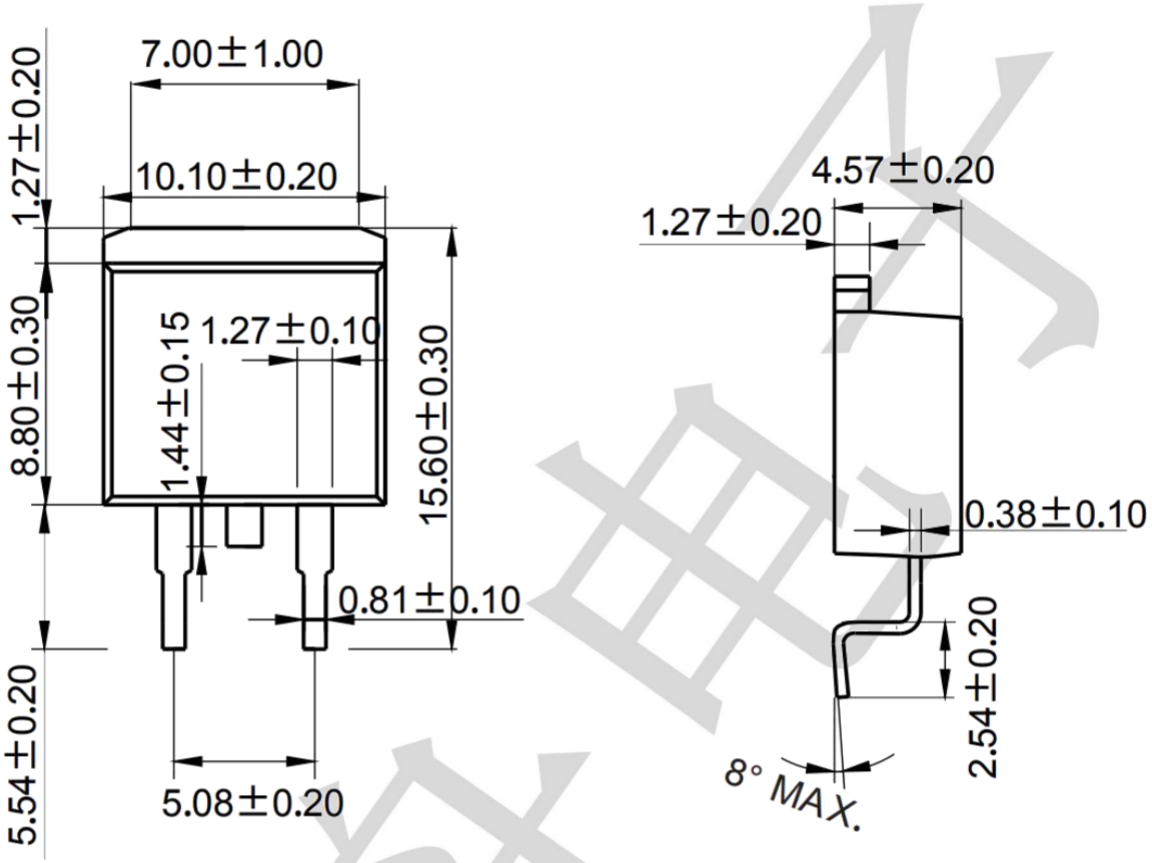


Mounting Pad Layout (unit: mm)



Package Outline Dimensions (unit: mm)

TO-263



Mounting Pad Layout (unit: mm)

