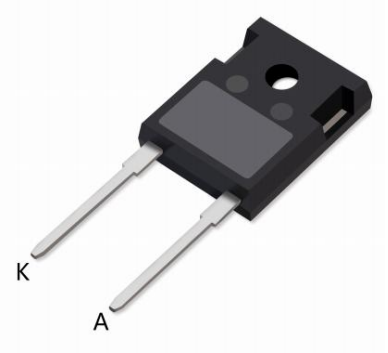
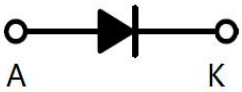
FRED
Ultrafast Soft Recovery Diode, 75A

Features:

- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low power loss, less RFI and EMI
- Low I_R value
- High surge capacity
- Epitaxial chip construction





Product Summary	
V_R	1200 V
$I_{F(AV)}$	75A
t_{rr}	62 ns

Description/Applications

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery behavior of the diodes offers the need as snubber in most applications. These devices are ideally suited for HF welding power converters and other applications where the switching losses are not significant portion of the total losses.

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	Unit
Repetitive peak reverse voltage	V_{RRM}		1200	V
Continuous forward current	$I_{F(AV)}$	Tc =110°C	75	A
Single pulse forward current	I_{FSM}	Tc =25°C	600	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	150	
Operating junction	Tj		175	°C
Storage temperatures	Tstg		-55 to +175	°C

Electrical characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	V_{BR}, V_R	I_R=100μA	1200			V
Forward voltage	V_F	I_F=75A		2.2	2.9	
		I_F=75A, Tj =125°C		1.9	2.8	
Reverse leakage current	I_R	V_R= V_{RRM}			20	μA
		Tj=150°C, V_R=1200V			300	
Reverse recovery time	t_{rr}	I_F=0.5A, I_R=1A, I_{RR}=0.25A		62	90	ns
Reverse recovery time	t_{rr}	I_F=75A, di_F/dt=-200A/us, V_R=800V,T_C=25℃		93		ns
Reverse recovery charge	Q_{rr}			900		nC
Maximum reverse recovery current	I_{RRM}			9.3		A
Reverse recovery time	t_{rr}	I_F=75A, di_F/dt=-200A/us, V_R=800V,T_C=125℃		255		ns
Reverse recovery charge	Q_{rr}			8483		nC
Maximum reverse recovery current	I_{RRM}			20		A

Thermal characteristics

Paramter	Symbol	Typ.	Unit
Junction-to-Case	$R_{\theta JC}$	0.65	℃/W

Electrical performance (typical)

FIG.1 Forward Characteristic (typical)

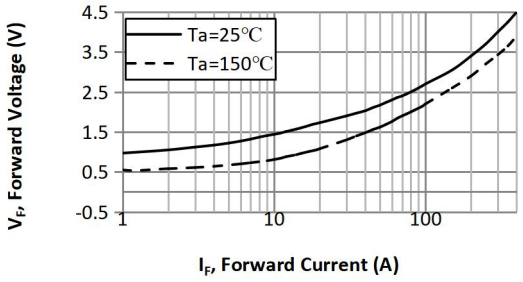


FIG.2 Reverse Characteristic(typ.)

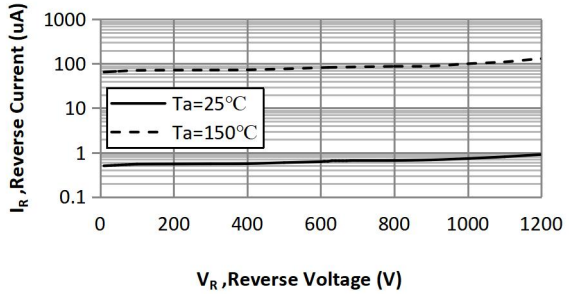


FIG.3 Reverse Recover Time vs.Current Rate of Change

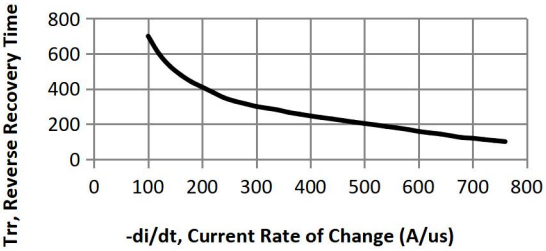


FIG.4 Reverse Recover Charge vs.Current Rate of Change

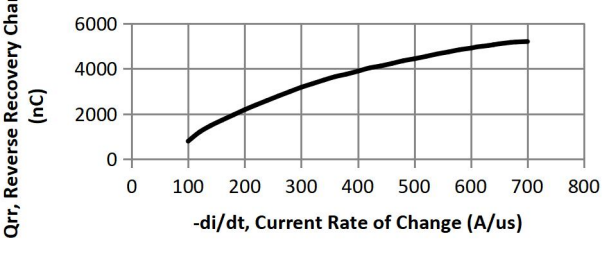


FIG.5 Reverse Recover Current vs.Current Rate of Change

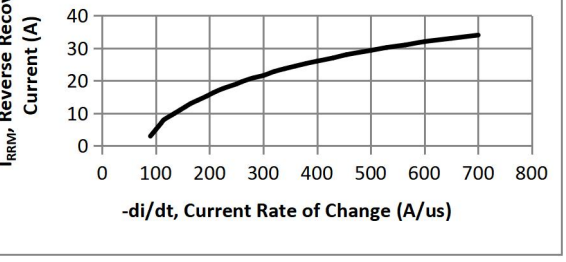


FIG.6 Average Forward Current vs.Case Temperature

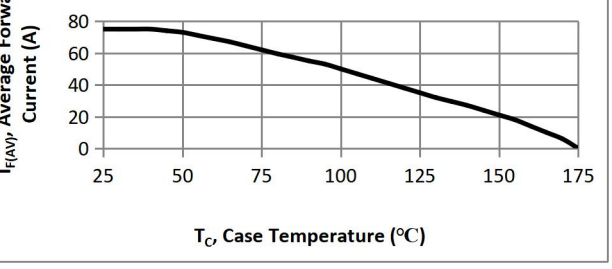
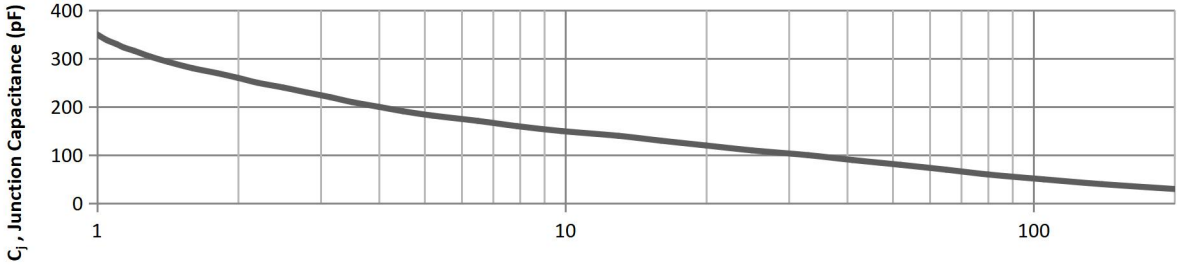
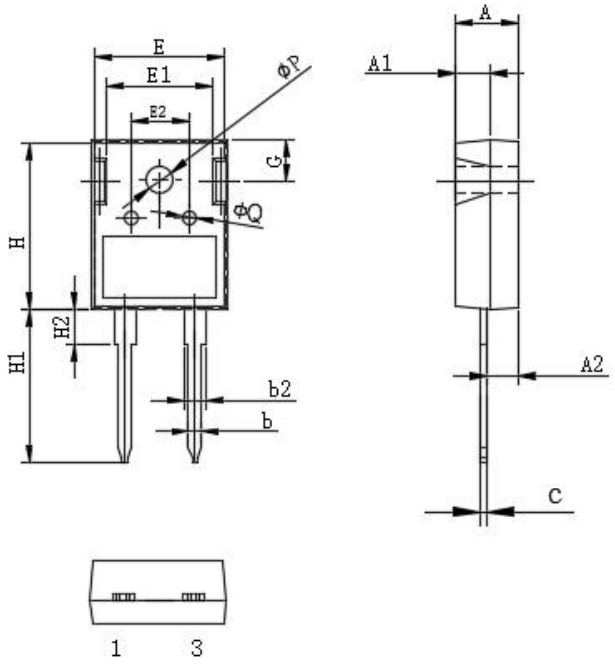


FIG.7 Junction Capacitance vs. Reverse Voltage



Package Information

TO-247H-2L PACKAGE



基本尺寸

Symbol	单位 mm		
	Min	Nom	Max
A	4.80	5.00	5.20
A1	2.80	3.00	3.20
A2	2.20	2.40	2.60
b	1.05	1.20	1.35
b2	1.80	2.00	2.20
c	0.50	0.60	0.70
E	15.6	15.80	16.0
E1	12.3	12.50	12.7
E2	6.00	6.20	6.40
H	20.5	21.0	21.5
H1	19.0	20.0	21.0
H2	3.00	4.00	5.00
G	5.70	5.90	6.10
ΦP	3.30	3.50	3.50
ΦQ	2.30	2.50	2.70

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