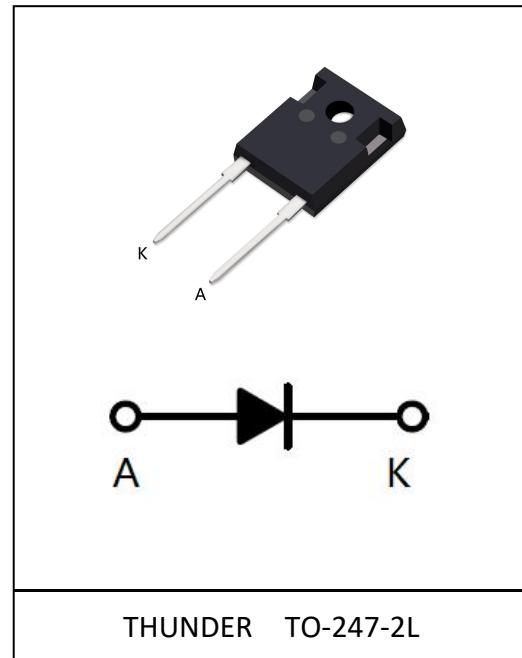


Thunder High Power Products
FRED
Ultrafast Soft Recovery Diode, 75A
Features:

- 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	650 V
$I_{F(AV)}$	75A
t_{rr}	40ns


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	Units
Repetitive peak reverse voltage	V_{RRM}		650	V
Continuous forward current	$I_{F(AV)}$	$T_c = 110^\circ C$	75	A
Single pulse forward current	I_{FSM}	$T_c = 25^\circ C$	700	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHz	160	
Operating junction	T_j		175	°C
Storage temperatures	T_{stg}		-55 to +175	°C

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

Parameter	Symbol	Test Conditions	Min	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V_{BR} , V_R	$I_R=100\mu A$	650			V
Forward voltage (Per Diode)	V_F	$I_F=75A$		1.60	2.20	V
		$I_F=75A, T_j =125^\circ C$		1.45	2.10	
Reverse leakage current(Per Diode)	I_R	$V_R=V_{RRM}$			30	μA
		$T_j=150^\circ C, V_R=650V$			300	
Reverse recovery time(Per Diode)	t_{rr}	$I_F=0.5A, I_R=1A, I_{RR}=0.25A$		40	75	ns
Reverse recovery time	t_{rr}	$I_F=75A, V_R =300V,$ $d_{IF}/dt = -200A/\mu s, T_j=25^\circ C$		65		ns
Maximum Reverse Recovery Current	I_{RM}			6		A
Reverse Recovery Charge	Q_{rr}			401		nC
Reverse recovery time	t_{rr}	$I_F=75A, V_R =300V,$ $d_{IF}/dt = -200A/\mu s, T_j=125^\circ C$		146		ns
Maximum Reverse Recovery Current	I_{RM}			14		A
Reverse Recovery Charge	Q_{rr}			2821		nC

Thermal characteristics

Paramter	Symbol	Typ	Units
Junction-to-Case	$R_{\theta JC}$	0.7	$^\circ C/W$

Typical Performance Characteristics

FIG.1 Forward Characteristic (typical)

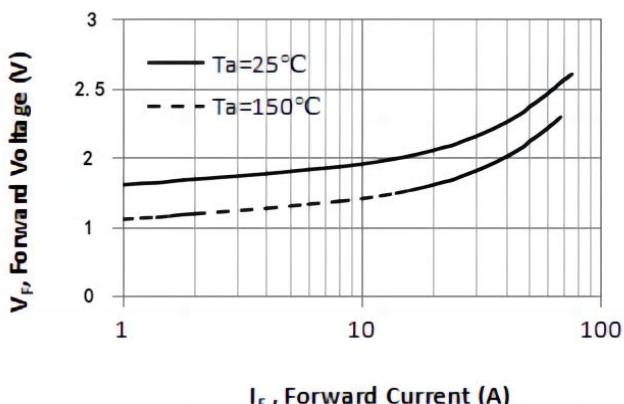


FIG.2 Reverse Characteristic (Typical)

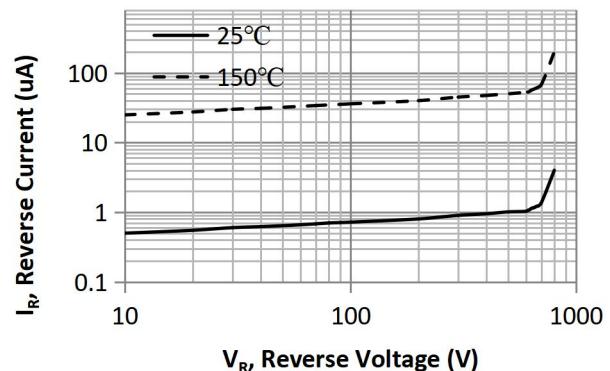


FIG.3 Reverse Recover Time vs. Current Rate of Change

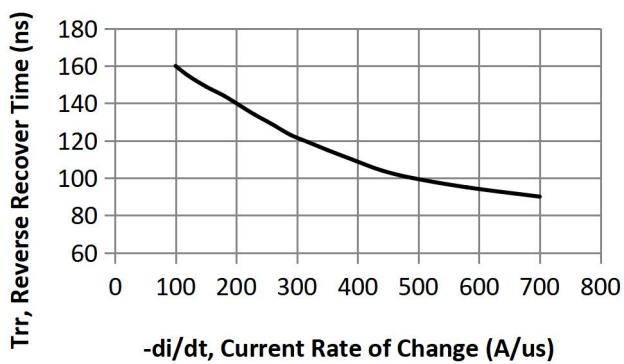


FIG.4 Reverse Recover Charge vs. Current Rate of Change

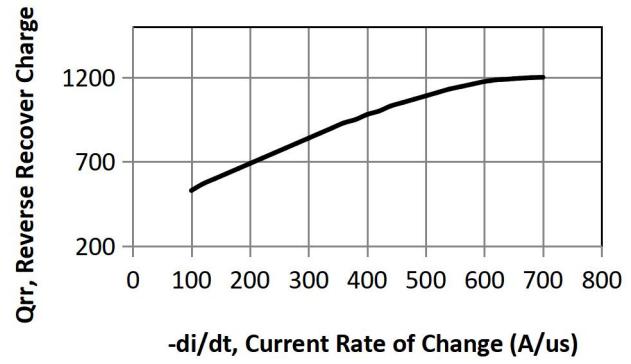


FIG.5 Reverse Recover Current vs. Current Rate of Change

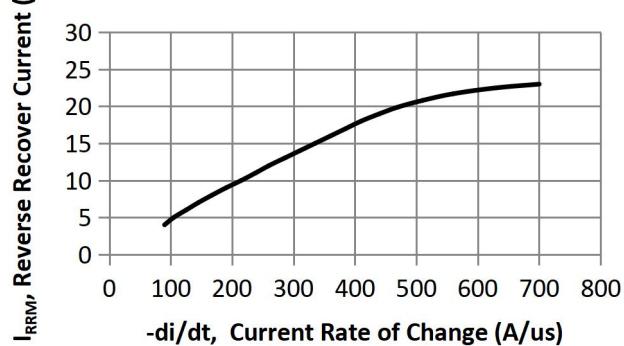
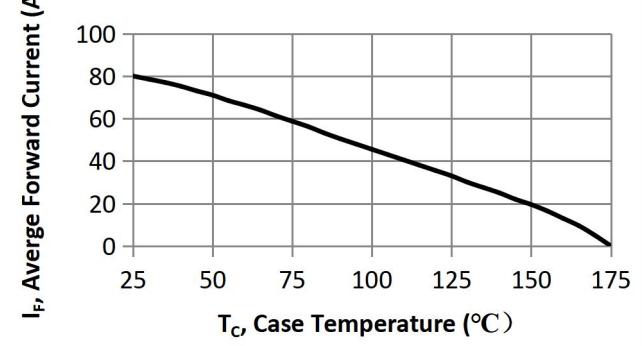
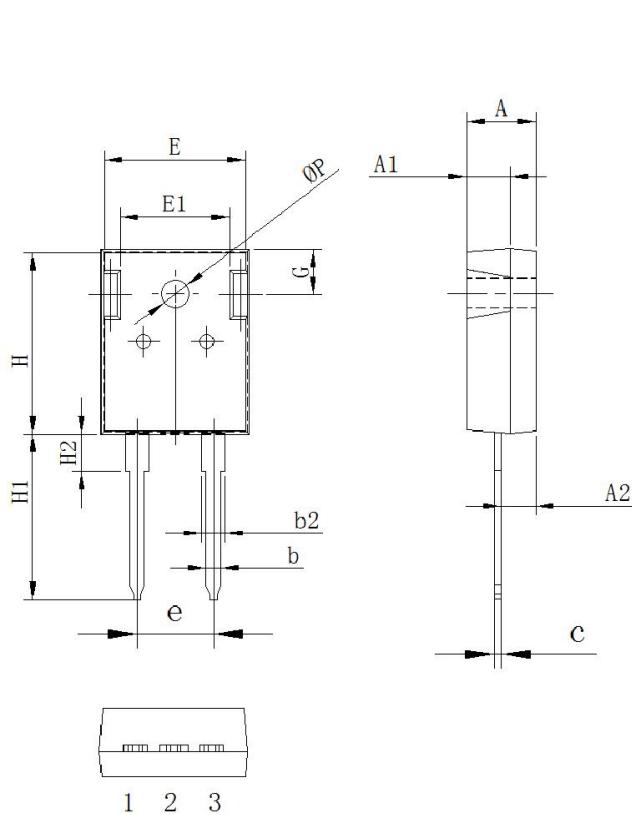


FIG.6 Average Forward Current vs. Case Temperature



Package Information

TO-247-2L PACKAGE



基本尺寸

Symbol	单位 mm		
	Min	Nom	Max
A	4.8	5.00	5.20
A1	3.3	3.5	3.7
A2	2.20	2.40	2.60
b	1.00	1.2	1.40
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c	0.50	0.60	0.70
e	10.5	10.9	11.3
E	15.2	15.7	16.2
E1	10.2	10.7	11.2
H	20.8	21	21.2
H1	19.5	20.0	20.5
H2	4.00	4.20	4.40
G	5.60	5.80	600
ΦP	3.50	3.70	3.90

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