

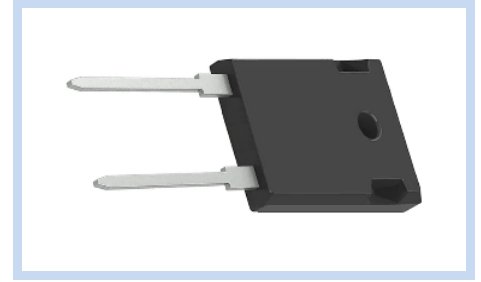
Fast Recovery Rectifier 1200V 30A TO-247-2

FRED30120T2472

MERITEK

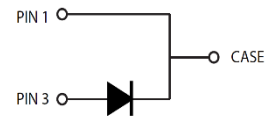
FEATURES

- Hyperfast and Optimized Q_{RR}
- Optimized for High Speed Operation
- Suppressed switching loss with low T_{RR}
- Soft Recovery Characteristic for Better EMI
- Application: Switching Power Supply, Power Switching Circuits, PFC and Output Rectification of Battery Charge Station



MECHANICAL DATA

- Case: TO-247-2, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Band Marking Denoted Cathode End



MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	V
Maximum DC Blocking Voltage	V_{DC}	1200	
Average Forward Rectified Current at $T_L=95^\circ\text{C}$	$I_{F(AV)}$	30	A
Repetitive Peak Surge Current, 8.3ms, Sine-Wave, D=0.5	I_{FRM}	60	
Peak Forward Surge Current, 8.3ms Single Half-Sine-Wave Superimposed on Rated Load	I_{FSM}	190	
Maximum Power Dissipation	P_{TOT}	139	W
Typical Thermal Resistance	$R_{\theta JC}$	0.9	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

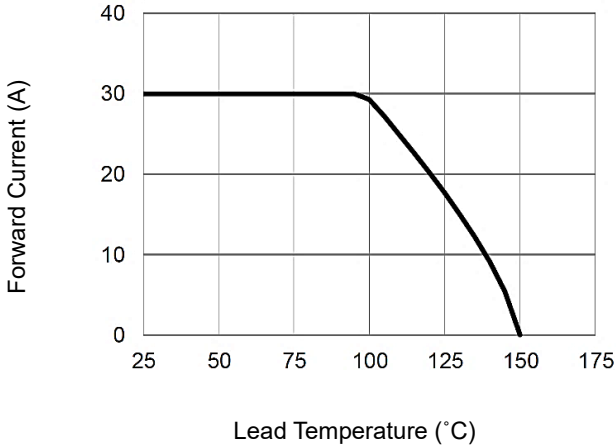
Notes: $T_C = 25^\circ\text{C}$ unless otherwise noted

ELECTRICAL CHARACTERISTICS

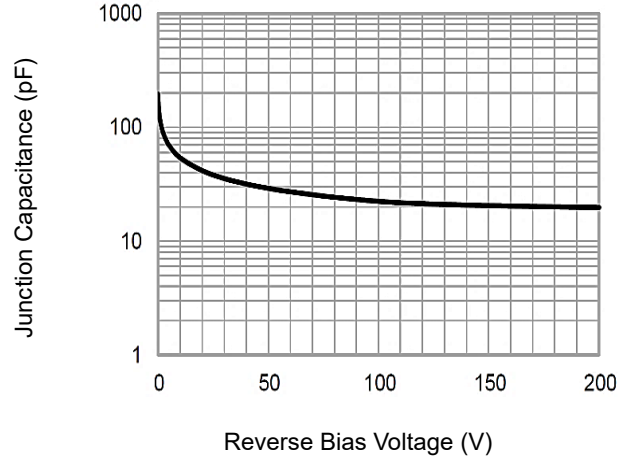
Parameter	Conditions	Symbol	Min	Typ.	Max	Unit
Instantaneous Forward Voltage	$I_F = 30\text{A}, T_J = 25^\circ\text{C}$	V_F	--	3.0	3.5	V
	$I_F = 30\text{A}, T_J = 125^\circ\text{C}$		--	2.2	--	
Reverse Leakage Current	$V_R = 1200\text{V}, T_J = 25^\circ\text{C}$	I_R	--	--	250	μA
	$V_R = 1200\text{V}, T_J = 125^\circ\text{C}$		--	--	1	mA
Maximum Reverse Recovery Time $T_J = 25^\circ\text{C}$	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$	T_{RR}	--	--	50	nS
	$I_F = 1\text{A}, V_R = 30\text{V}, di/dt = 300\text{A}/\mu\text{s}$		--	--	40	
Reverse Recovery Time	$I_F = 30\text{A}, V_R = 400\text{V}, di/dt = 300\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	T_{RR}	--	135	200	nS
Peak Recovery Current		I_{RRM}	--	5.2	--	A
Reverse Recovery Charge		Q_{RR}	--	360	--	nC
Softness factor = t_b/t_a		S	--	3.4	--	--
Reverse Recovery Time		T_{RR}	--	200	--	nS
Peak Recovery Current		I_{RRM}	--	12	--	A
Reverse Recovery Charge		Q_{RR}	--	1460	--	nC
Softness factor = t_b/t_a		S	--	2.05	--	--

CHARACTERISTIC CURVES

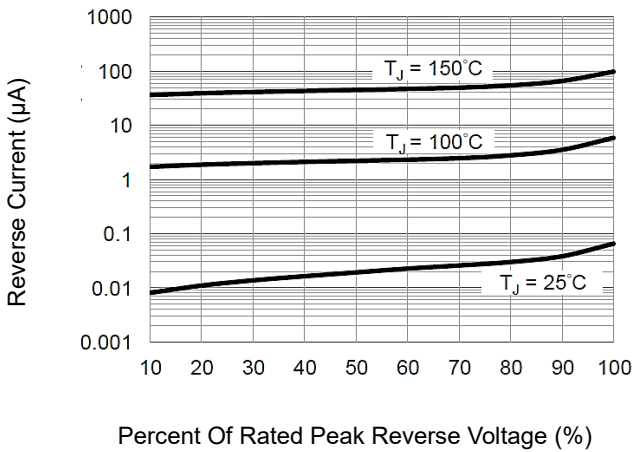
Forward Current Derating Curve



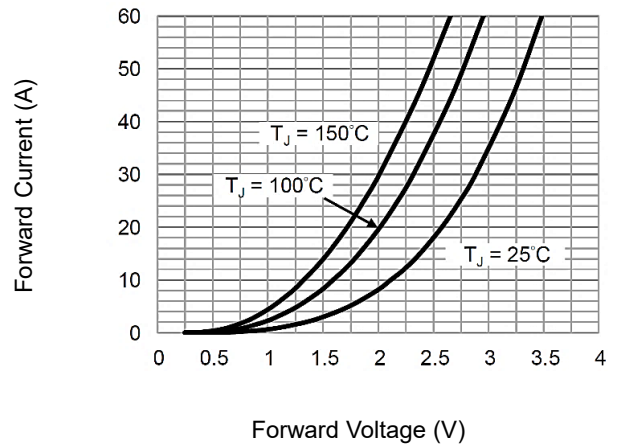
Typical Junction CApitance



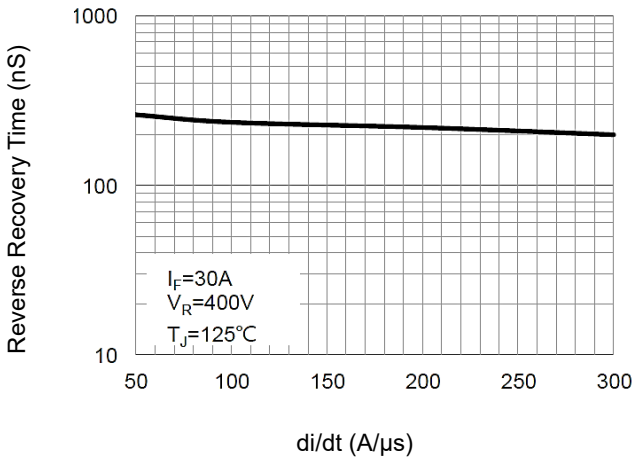
Typical Reverse Characteristics



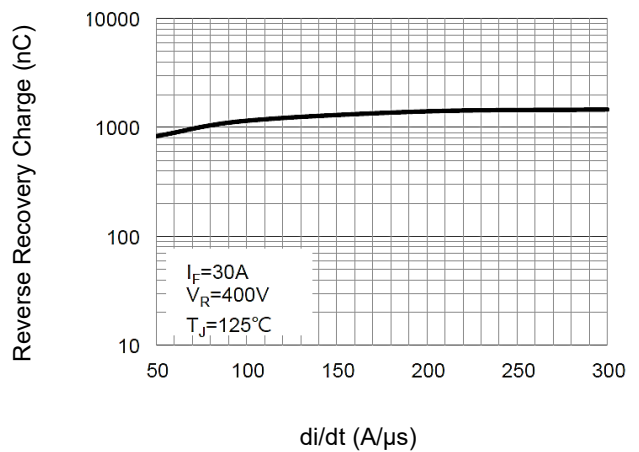
Typical Forward Characteristics



Typical Reverse Recovery Time



Typical Reverse Recovery Charge



Fast Recovery Rectifier 1200V 30A TO-247-2

FRED30120T2472

MERITEK

DIMENSIONS

Item	Min (mm)	Max (mm)
A	4.70	5.31
A1	1.50	2.49
b	0.99	1.40
b2	2.65	3.39
c	0.38	0.89
D	20.30	21.46
D1	4.32	5.49
E	15.43	16.26
e1	10.90	--
L	19.75	20.32
L1	--	4.50
P	3.50	3.70
Q	5.38	6.20

