Fast Recovery Rectifier
600V 30A TO-220F

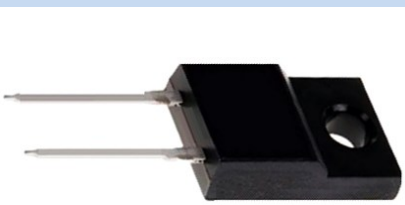
FRED3060LT220F

MERITEK

FEATURES

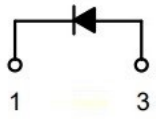
- Optimized Performance Between VF & TR
- Soft Recovery Characteristic
- Reduced EMI and Improved Performance
- Improved Thermal Performance

Application: Rectifiers in Switching Mode Power, UPS, PV Inverter, EV Charging Station, and Welder



MECHANICAL DATA

- Case: TO-220F, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



RoHS

MAXIMUM RATINGS

Parameter	Symbol	Value	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	600	V
Maximum DC Blocking Voltage	V_{DC}	600	
Average Forward Rectified Current at T_L=100°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}	330	
Maximum Power Dissipation	P_{TOT}	63	W
Maximum Thermal Resistance	$R_{\theta JC}$	2	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

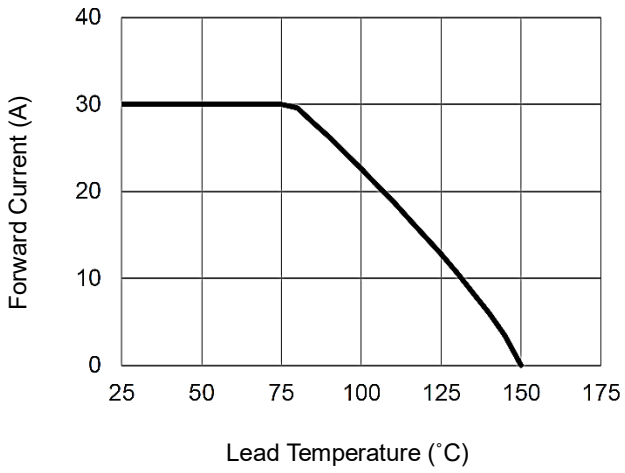
ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Symbol	Min	Typ.	Max	Unit
Instantaneous Forward Voltage	I_F= 30A, T_J=25°C	V_F	--	1.3	1.8	V
	I_F= 30A, T_J=125°C		--	1.2	--	
Reverse Leakage Current	V_R=600V, T_J=25°C	I_R	--	--	250	μA
	V_R=600V, T_J=125°C		--	--	1	mA
Reverse Recovery Time	I_F= 0.5A, I_R= 1A, I_{RR}= 0.25A, T_J=25°C	T_{RR}	--	--	55	nS
	I_F= 1A, V_R= 30V, di/dt= 300A/μs, T_J=25°C		--	--	40	
Reverse Recovery Time	I_F= 30A, V_R= 400V, di/dt= 300A/μs, T_J=25°C	T_{RR}	--	75	115	nS
Peak Recovery Current		I_{RRM}	--	6.6	--	A
Reverse Recovery Charge		Q_{RR}	--	325	--	nC
Softness factor = t_b/t_a		S	--	0.9	--	--
Reverse Recovery Time	I_F= 30A, V_R= 400V, di/dt= 300A/μs, T_J=125°C	T_{RR}	--	115	--	nS
Peak Recovery Current		I_{RRM}	--	14.5	--	A
Reverse Recovery Charge		Q_{RR}	--	1150	--	nC
Softness factor = t_b/t_a		S	--	0.46	--	--

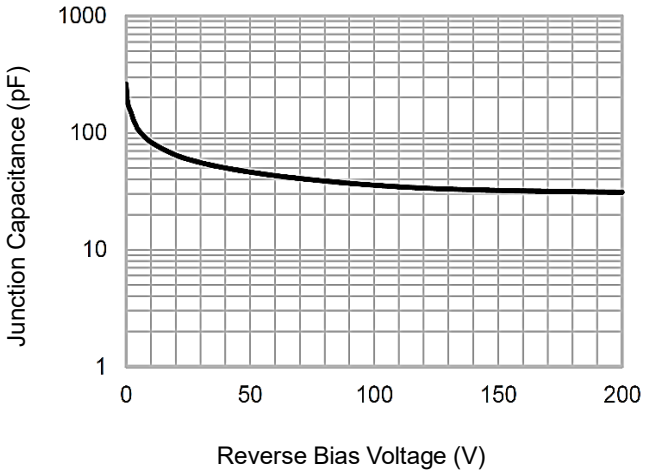
Notes: T_C =25°C unless otherwise noted

CHARACTERISTIC CURVES

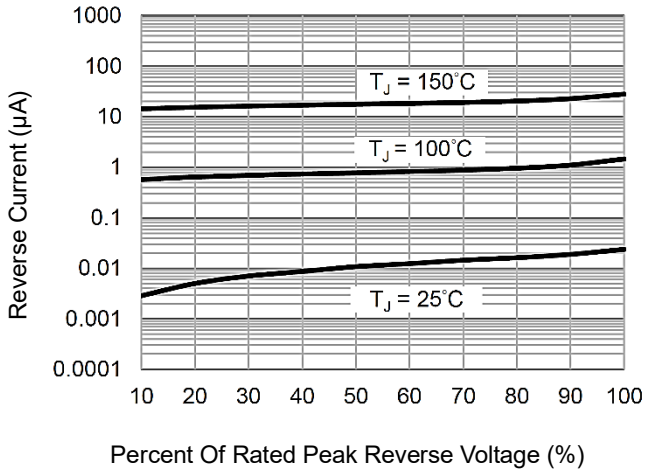
Forward Current Derating Curve



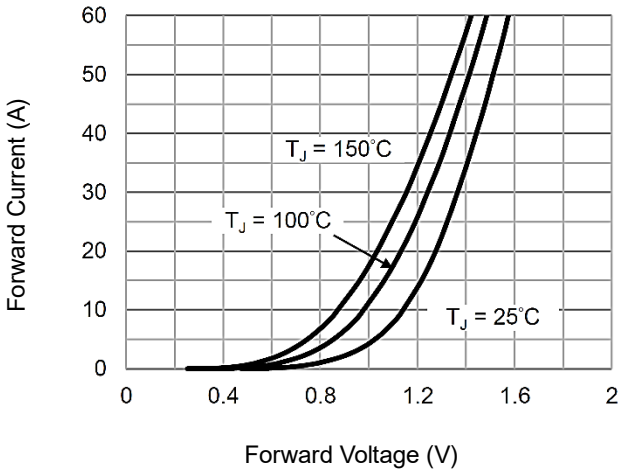
Typical Junction CApacitance



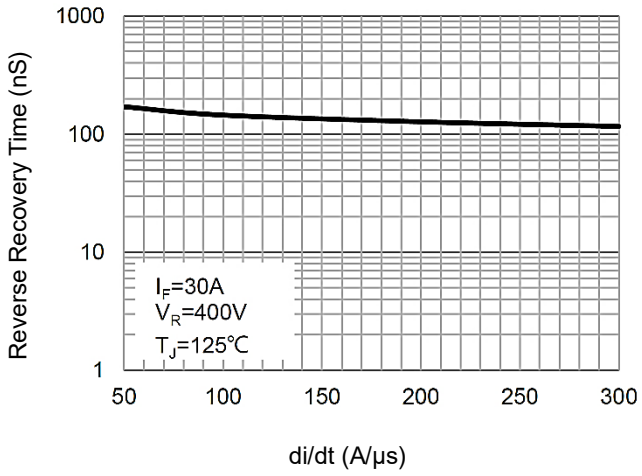
Typical Reverse Characteristics



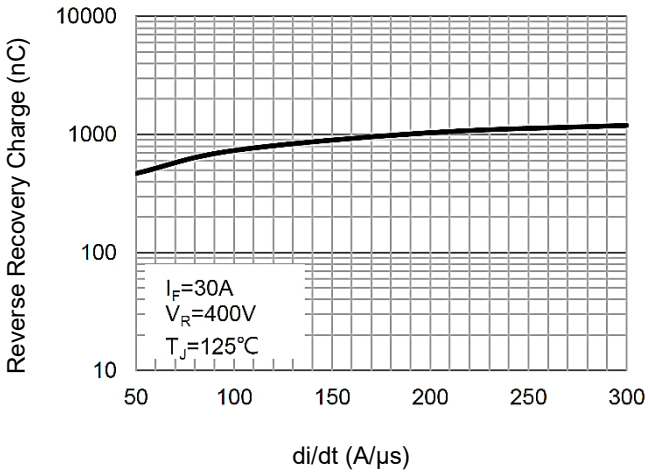
Typical Forward Characteristics



Typical Reverse Recovery Time



Typical Reverse Recovery Charge



DIMENSIONS

Item	Min (mm)	Max (mm)
A	4.20	4.80
A1	2.90	3.30
A2	2.50	2.90
b	0.50	0.70
b2	1.00	1.40
c	0.57	0.67
D	14.80	15.40
E	9.7	10.30
e1	5.10 BSC	
H1	6.30	6.90
L	13.00	13.8
L1	3.50	4.50
P	3.00	3.40
Q	2.55	2.85

Notes: Pin 1: Cathode; Pin 3: Anode