

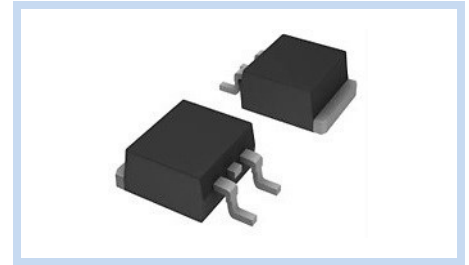
Fast Recovery Rectifier 600V 8A TO-263

FRED0860ST263

MERITEK

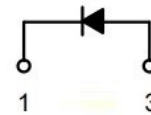
FEATURES

- Optimized Performance Between V_F & T_R
- 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-263, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026



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 $T_L=130^\circ\text{C}$	$I_{F(AV)}$	8	A
Repetitive Peak Surge Current, 8.3ms, Sine-Wave, D=0.5	I_{FRM}	16	
Peak Forward Surge Current, 8.3ms Single Half-Sine-Wave Superimposed on Rated Load	I_{FSM}	75	
Maximum Power Dissipation	P_{TOT}	69	W
Maximum Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.8	$^\circ\text{C/W}$
Maximum Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

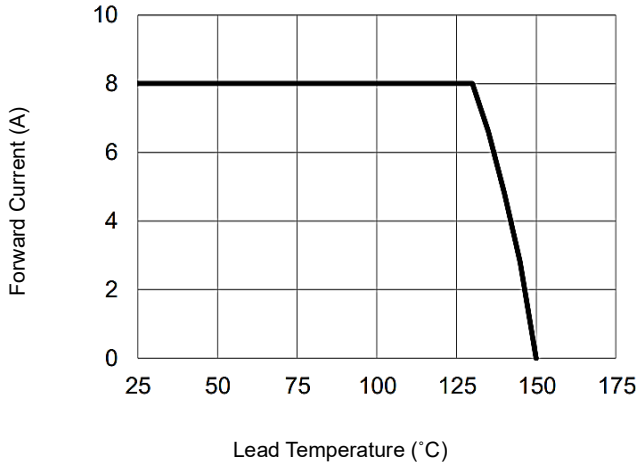
ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Symbol	Min	Typ.	Max	Unit
Instantaneous Forward Voltage	$I_F=8\text{A}, T_J=25^\circ\text{C}$	V_F	--	1.8	2.3	V
	$I_F=8\text{A}, T_J=125^\circ\text{C}$		--	1.45	--	
Reverse Leakage Current	$V_R=600\text{V}, T_J=25^\circ\text{C}$	I_R	--	--	100	μA
	$V_R=600\text{V}, T_J=125^\circ\text{C}$		--	--	500	μA
Reverse Recovery Time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}, T_J=25^\circ\text{C}$	T_{RR}	--	--	35	nS
	$I_F=1\text{A}, V_R=30\text{V}, di/dt=300\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$		--	--	30	
Reverse Recovery Time	$I_F=8\text{A}, V_R=400\text{V}, di/dt=300\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$	T_{RR}	--	35	55	nS
Peak Recovery Current		I_{RRM}	--	3.1	--	A
Reverse Recovery Charge		Q_{RR}	--	55	--	nC
Softness factor = t_b/t_a		S	--	1.45	--	--
Reverse Recovery Time		T_{RR}	--	55	--	nS
Peak Recovery Current	$I_F=8\text{A}, V_R=400\text{V}, di/dt=300\text{A}/\mu\text{s}, T_J=125^\circ\text{C}$	I_{RRM}	--	5.6	--	A
Reverse Recovery Charge		Q_{RR}	--	215	--	nC
Softness factor = t_b/t_a		S	--	0.9	--	--

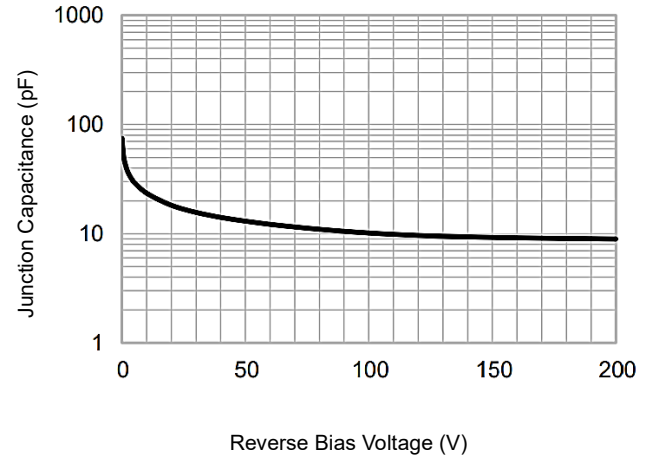
Notes: $T_C=25^\circ\text{C}$ unless otherwise noted

CHARACTERISTIC CURVES

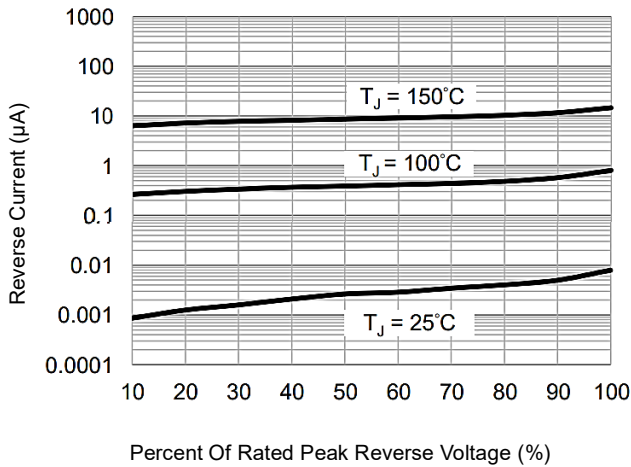
Forward Current Derating Curve



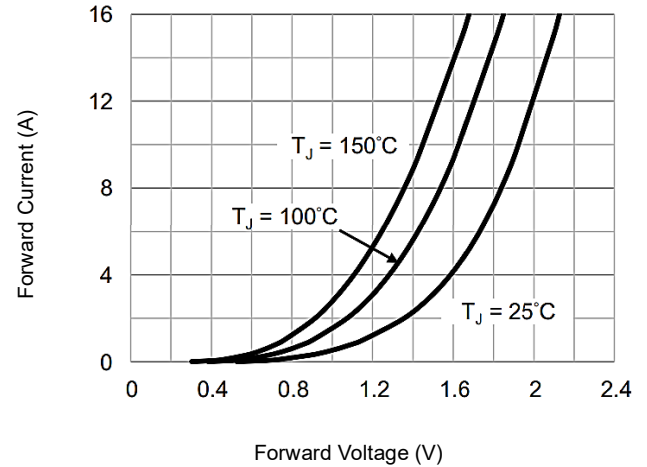
Typical Junction Capacitance



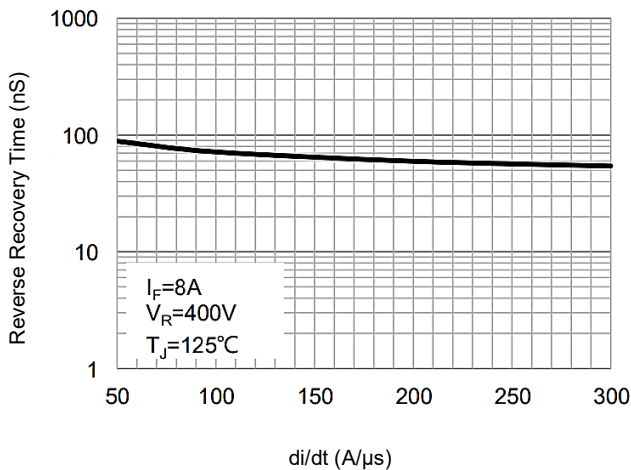
Typical Reverse Characteristics



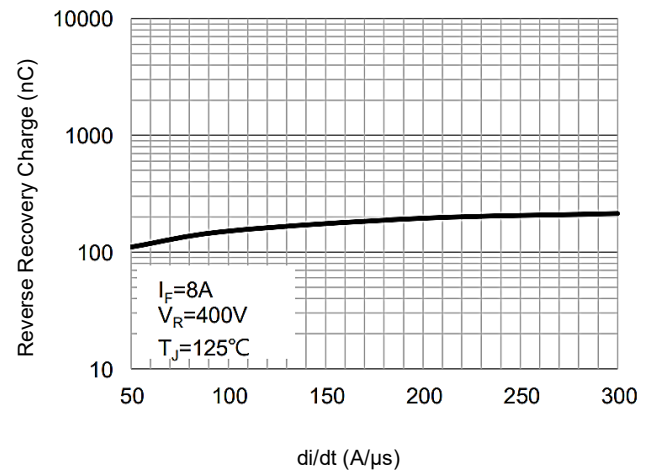
Typical Forward Characteristics



Typical Reverse Recovery Time



Typical Reverse Recovery Charge



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DIMENSIONS

Item	Min (mm)	Max (mm)
A	4.40	4.80
b	0.00	0.90
b2	1.00	1.40
c	0.30	0.70
c2	1.20	1.40
D	8.50	9.10
E	9.80	10.40
e	2.35	2.75
H	9.60	10.60
L	5.00	6.00
L1	1.50	2.10

Notes: Pin 1: Cathode; Pin 3: Anode

