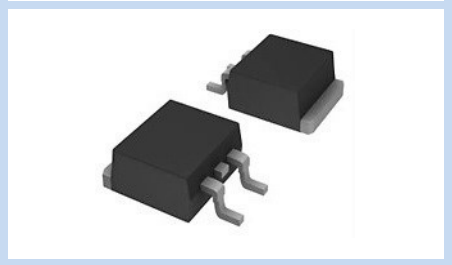
Fast Recovery Rectifier
600V 8A TO-252

FRED0860SDT252SD

MERITEK

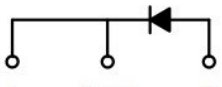
FEATURES

- 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-252, 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=133°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}	50	W
Maximum Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.5	°C/W
Maximum Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	90	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

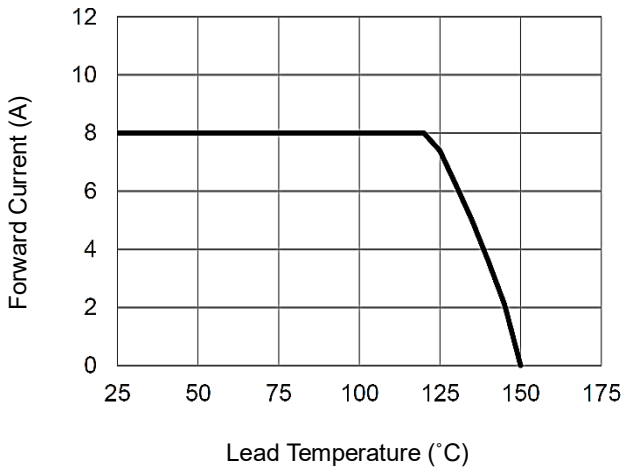
ELECTRICAL CHARACTERISTICS

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

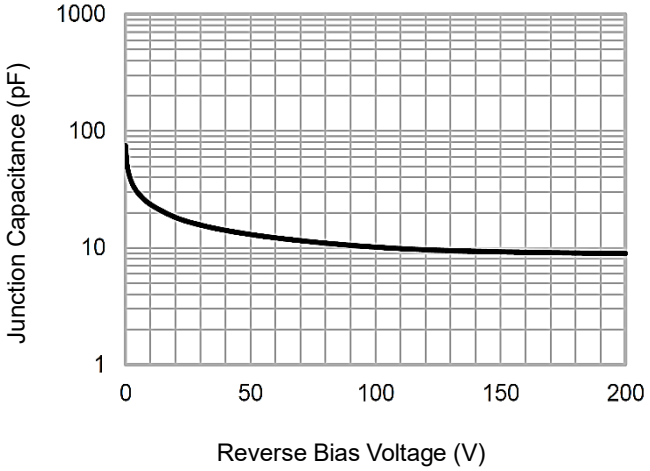
Notes: T_C =25°C unless otherwise noted

CHARACTERISTIC CURVES

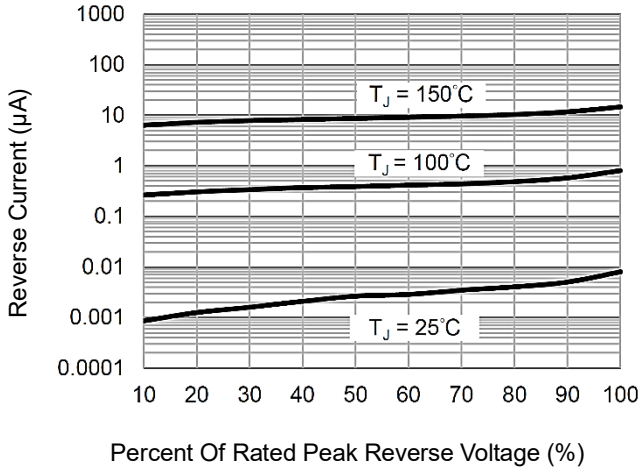
Forward Current Derating Curve



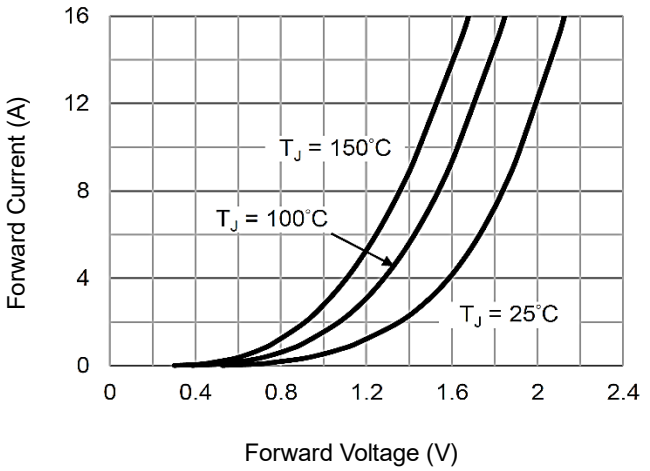
Typical Junction CApacitance



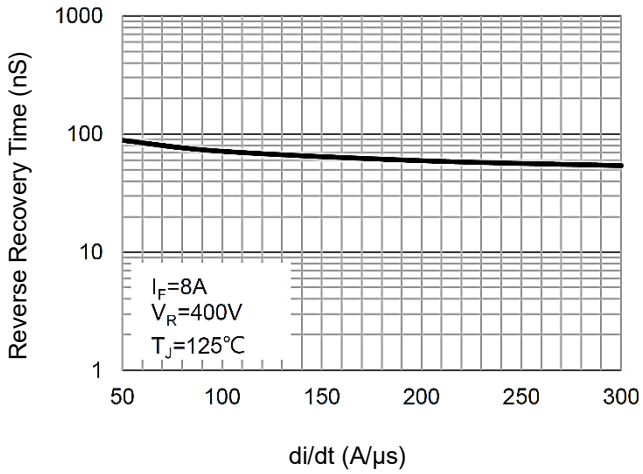
Typical Reverse Characteristics



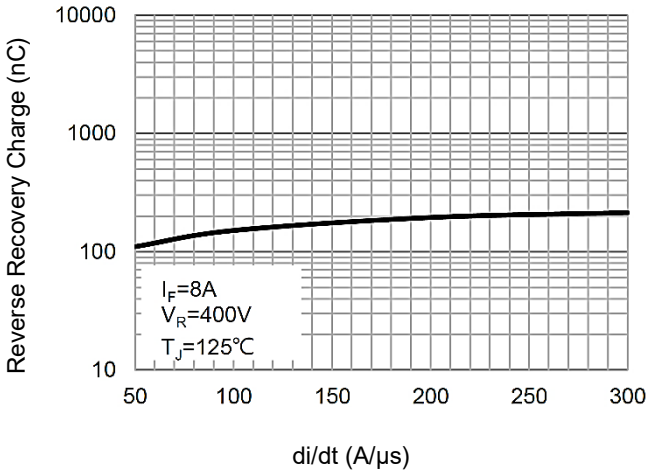
Typical Forward Characteristics



Typical Reverse Recovery Time



Typical Reverse Recovery Charge



DIMENSIONS

Item	Min (mm)	Max (mm)
A	2.20	2.40
A1	0.00	0.13
b	0.64	0.89
b1	4.95	5.46
c	0.508 BSC	
c2	0.46	0.89
D	5.97	6.22
E	6.35	6.73
e	2.29 BSC	
L	1.40	1.78
L1	0.89	1.27
L2	2.74 BSC	

Notes: Pin 1&2: Cathode; Pin 3: Anode