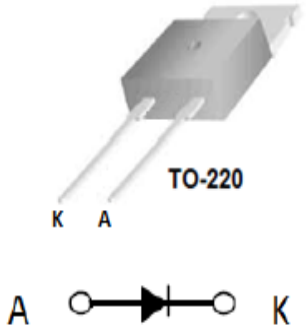
Hyperfast Diode
30A 600V trr ~ <40 ns



Features
Ultrafast Soft Recovery
175℃ operating junction temperature
Low Forward Voltage
Low Leakage Current

Applications
Freewheeling , Clamp
Snubber Diode
Switch Mode Power Supply
Motor Control
Inverters , Converters

Absolute Maximum Ratings T_C = 25 ℃ unless otherwise noted

Symbol	Parameter	Values	Units
V_R	Cathode – Anode voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current	30	A
I_{FSM}	Nonrepetitive Peak Surge Current@8.3ms	300	A
T_J	Operating Temperature Range	175	℃
E_{AVL}	Avalanche Energy	20	mJ
T_{STG}	Storage Temperature	-55 to +175	℃

Thermal characteristics

Symbol	Parameter	Values	Units
$R_{\theta ja}$	Thermal Resistance, Junction -to-ambient	60	℃/W
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	0.8	℃/W

Electrical Characteristics T_J = 25 ℃ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V_{BR}	Breakdown Voltage	I_R = 100 uA	600	--	--	V
V_F	Forward voltage	I_F = 30 A, T_J = 25 ℃	--	1.8	2.3	V
		I_F = 30 A, T_J = 125 ℃	--	1.45	2.0	V
I_R	Reverse Leakage Current	V_R = V_R rated	--	--	10	uA
		V_R = V_R rated, T_J = 125 ℃	--	30		uA
trr	Reverse recovery time	I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A	--	--	40	ns
		I_F = 30A,, di/dt =-200A/us	--	--	45	ns

Typical Performance Characteristics

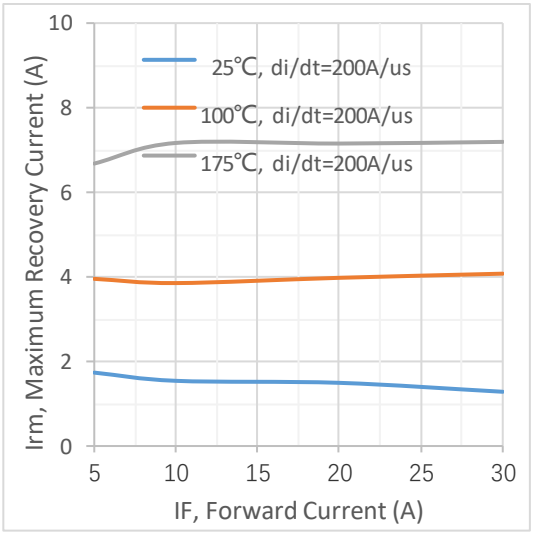


Figure 1. Irm vs Forward Current

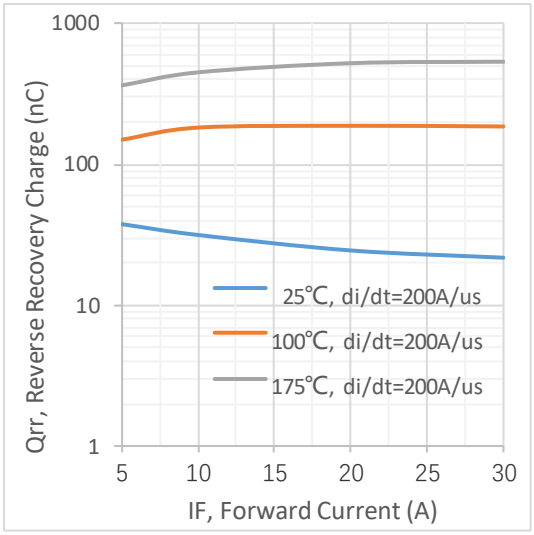


Figure 2. Qrr vs Forward Current

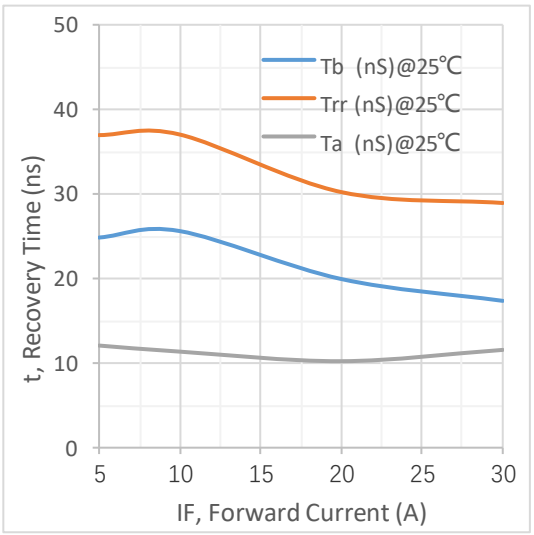


Figure 3 . trr, ta and tb Curves vs Forward Current

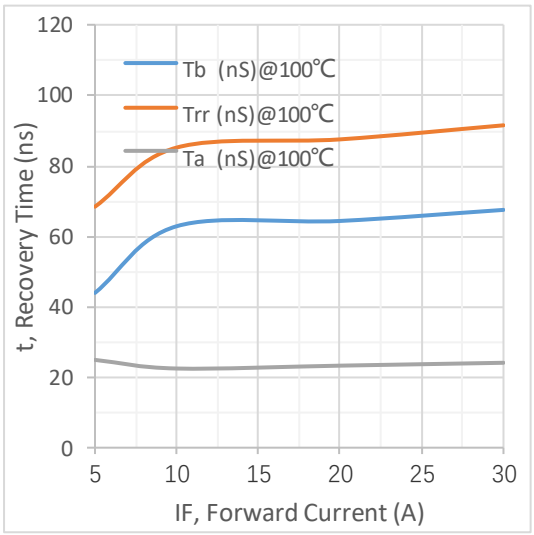


Figure 4 . trr, ta and tb Curves vs Forward Current

Typical Performance Characteristics

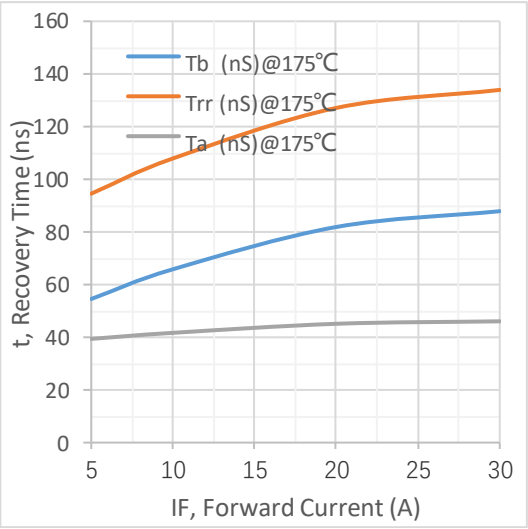


Figure 5 . trr, ta and tb Curves vs Forward Current