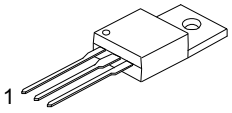
SFR1020C

DIODE

ULTRA-FAST RECOVERY RECTIFIER DIODES



TO-220

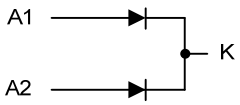
■ DESCRIPTION

UTC **SFR1020C** is dual center tap rectifier suited for high frequency Switching Mode PowerSupplies applications.

■ FEATURES

* High Surge Current Capability
* Suited For Smps, DC ~ DC Converters
* Low Forward And Reverse Recovery Time
* Low Losses

■ CONNECTION DIAGRAM



■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
SFR1020CL-TA3-T	SFR1020CG-TA3-T	TO-220	A1	K	A2	Tube

Note: Pin Assignment: A: Anode, K: Cathode

SFR1020CL- TA3 - T
(1)Packing Type
(2)Package Type
(3)Lead Free

(1) T: Tube
(2) TA3: TO-220
(3) L: Lead Free, G: Halogen Free

■ ABSOLUTE MAXIMUM RATING (limiting values, per leg)

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	200	V
RMS Forward Current	$I_{F(RMS)}$	10	A
Average Forward Current δ= 0.5 T_C=125°C (Per leg)	$I_{F(AV)}$	5	A
Surge Non Repetitive Forward Current, t_p=10ms Sinusoidal	I_{FSM}	50	A
Storage temperature range	T_{stg}	-60 ~ +150	°C

Note 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. The device is guaranteed to meet performance specification within 0°C~70°C operating temperature range and assured by design from –20°C~85°C.

■ ELECTRICAL CHARACTERISTICS (per leg)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Reverse Leakage Current	I_R (Note1)	T_J = 25°C	$V_R = V_{RRM}$			50	μA
		T_J = 100°C				0.6	mA
Forward Voltage Drop	V_F (Note2)	T_J = 25°C	I_F = 5 A			0.9	V
		T_J = 125°C	I_F = 5 A		0.69	0.74	

Note1. tp = 5 ms, δ< 2 %
2. tp = 380 μs, δ< 2 %

To evaluate the conduction losses use the following equation: $P = 0.78\times I_{F(AV)} + 0.042 \times IF^2(RMS)$

■ RECOVERY CHARACTERISTICS

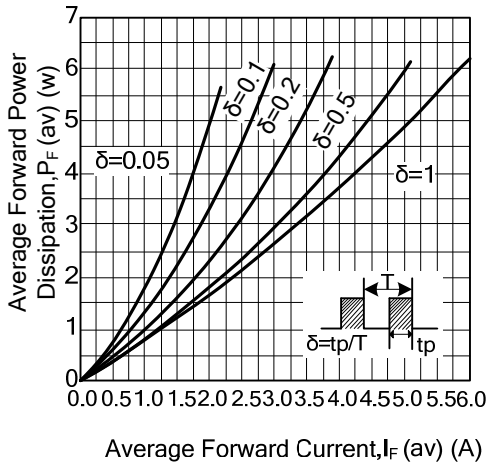
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Recovery Time	t_{rr}	T_J= 25°C, I_F = 0.5A, V_F = 30V, I_R = 1A			30	ns
Formard Recovery Time	t_{fr}	T_J = 25°C, I_F= 1A, dI_F/d_t = 50 A/μs $V_{FR} = 1.1\times V_{F\ max}$		20		ns
	V_{FP}	T_J= 25°C, I_F= 1A, dI_F/d_t = 50 A/μs		3		V

When diodes 1 and 2 are used simultaneously :

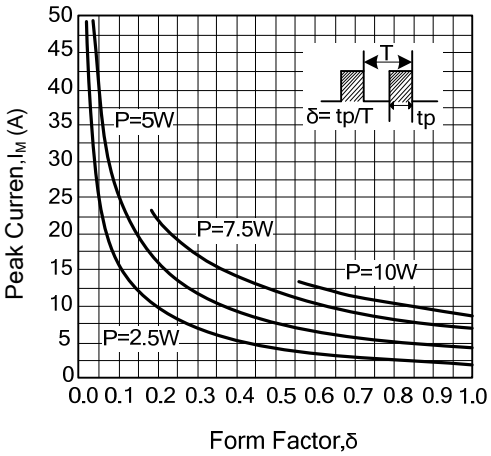
ΔT_J (diode 1) = P(diode 1)×$R_{th(j-c)}$(per leg) + P(diode 2) × $R_{th(c)}$

■ TYPICAL CHARACTERISTICS

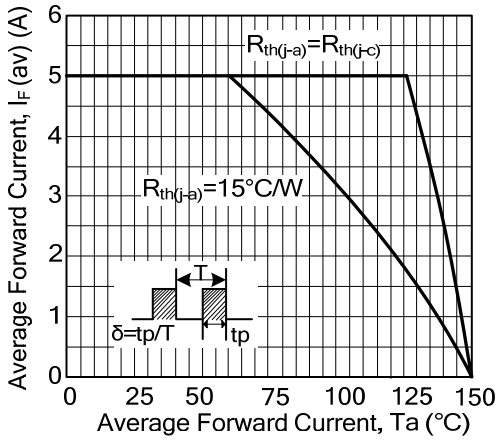
Average Forward Power Dissipation Versus Average Forward Current (Per Diode)



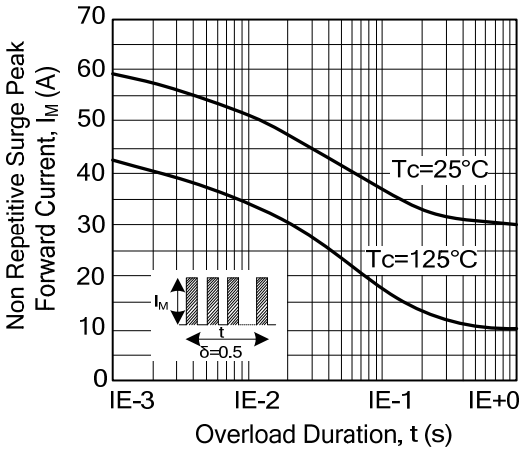
Peak Current Versus Form Factor (Per Diode)



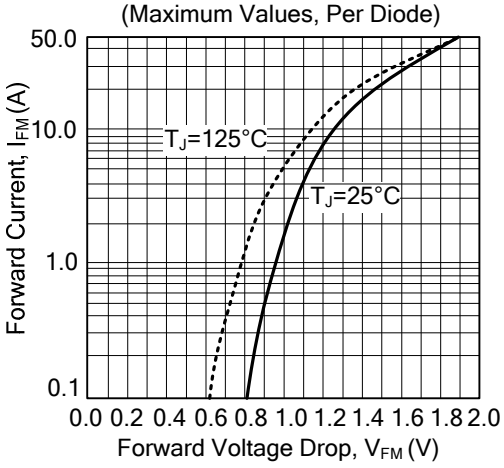
Average Forward Current Versus Ambient Temperature



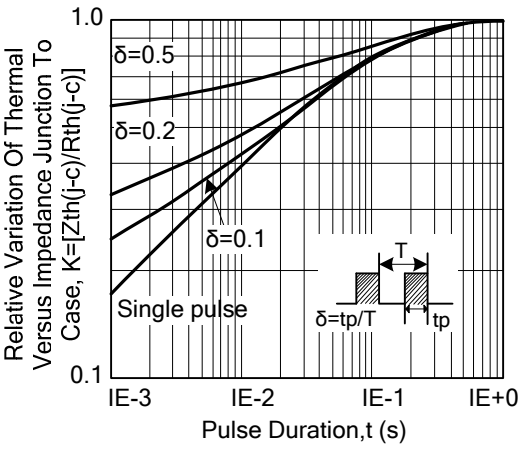
Non Repetitive Surge Peak Forward Current Versus Overload Duration



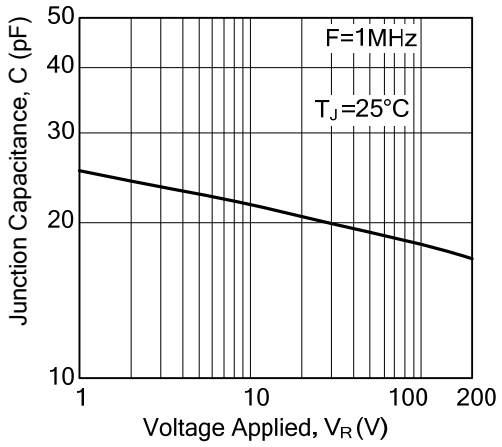
Forward Voltage Drop Versus Forward Current (Maximum Values, Per Diode)



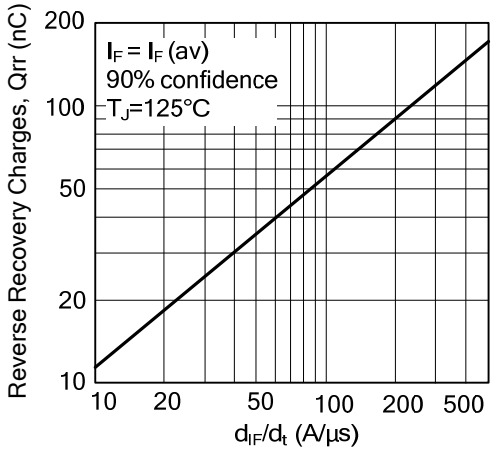
Relative Variation Of Thermal Versus Impedance Junction To Case Versus Pulse Duration



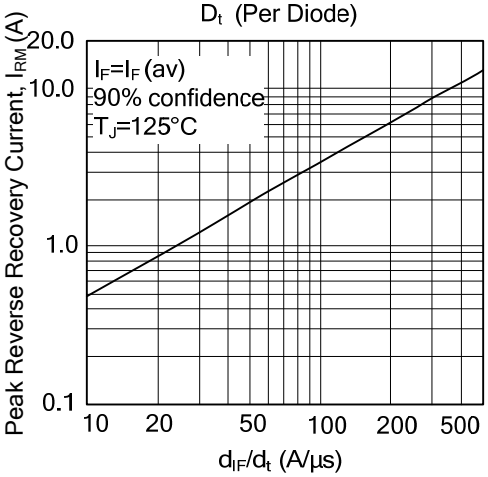
Junction Capacitance Versus Reverse Voltage Applied (Typical Values, Per Diode)



Reverse Recovery Charges Versus D_{if}/D_t (Per Diode)



Peak Reverse Recovery Current Versus D_{if}/D_t (Per Diode)



Dynamic Parameters Versus Junction Temperature (Per Diode)