

Voltage Ratings

Part number	30WQ05F	30WQ06F
V_R Max. DC Reverse Voltage (V)	50	60
V_{RWM} Max. Working Peak Reverse Voltage (V)		

Absolute Maximum Ratings

Parameters	30WQ..F	Units	Conditions	
$I_{F(AV)}$ Max. Average Forward Current * See Fig. 5	3.3	A	50% duty cycle @ $T_c = 104^\circ\text{C}$, rectangular wave form	
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 7	360	A	5 μs Sine or 3 μs Rect. pulse	Following any rated load condition and with rated V_{RWM} applied
	40		10ms Sine or 6ms Rect. pulse	

Electrical Specifications

Parameters	30WQ..F	Units	Conditions	
V_{FM} Max. Forward Voltage Drop * See Fig. 1 (1)	0.70	V	@ 3A	$T_J = 25^\circ\text{C}$
	1.14	V	@ 6A	
	0.60	V	@ 3A	$T_J = 125^\circ\text{C}$
	0.79	V	@ 6A	
I_{RM} Max. Reverse Leakage Current * See Fig. 2 (1)	2	mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
	20	mA	$T_J = 125^\circ\text{C}$	
C_T Typical Junction Capacitance	95	pF	$V_R = 5V_{DC}$, (test signal range 100Khz to 1Mhz) 25°C	
L_S Typical Series Inductance	5.0	nH	Measured lead to lead 5mm from package body	
dv/dt Max. Voltage Rate of Change (Rated V_R)	10,000	V/ μs		

(1) Pulse Width < 300 μs , Duty Cycle < 2%

Thermal-Mechanical Specifications

Parameters	30WQ..F	Units	Conditions
T_J Max. Junction Temperature Range	-40 to 125	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-40 to 125	$^\circ\text{C}$	
R_{thJC} Max. Thermal Resistance Junction to Case	6.0	$^\circ\text{C}/\text{W}$	DC operation * See Fig. 4
wt Approximate Weight	0.3(0.01)	g(oz.)	
Case Style	D - PAK		Similar to TO-252AA

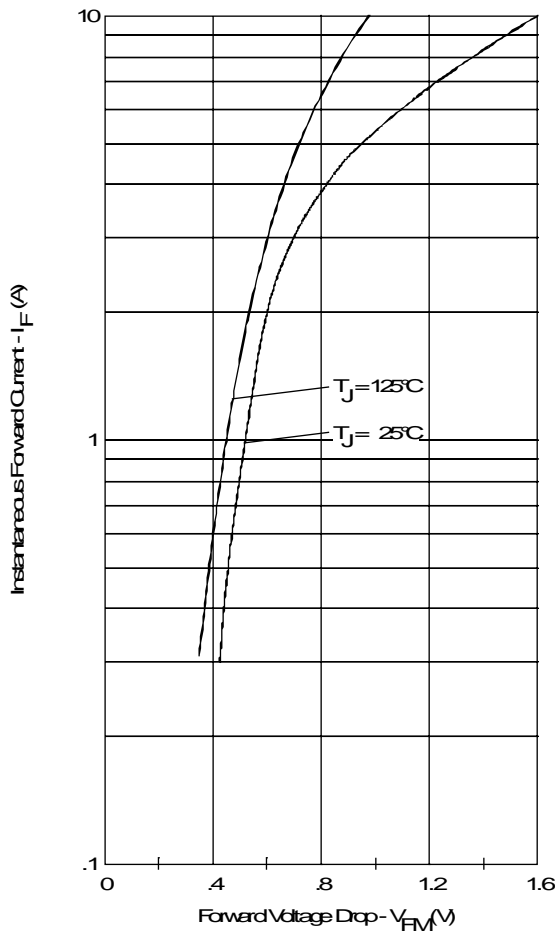


Fig. 1 - Maximum Forward Voltage Drop Characteristics

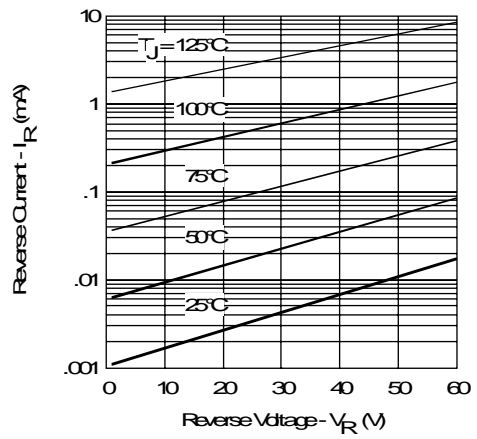


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

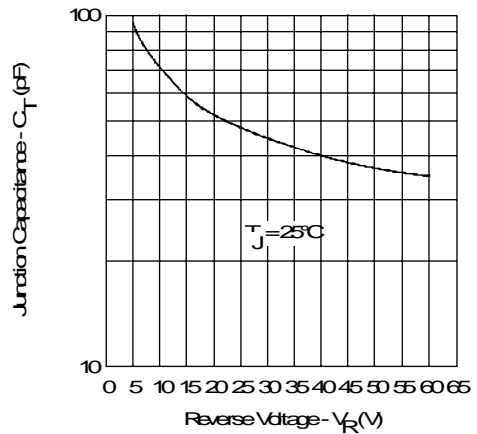


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

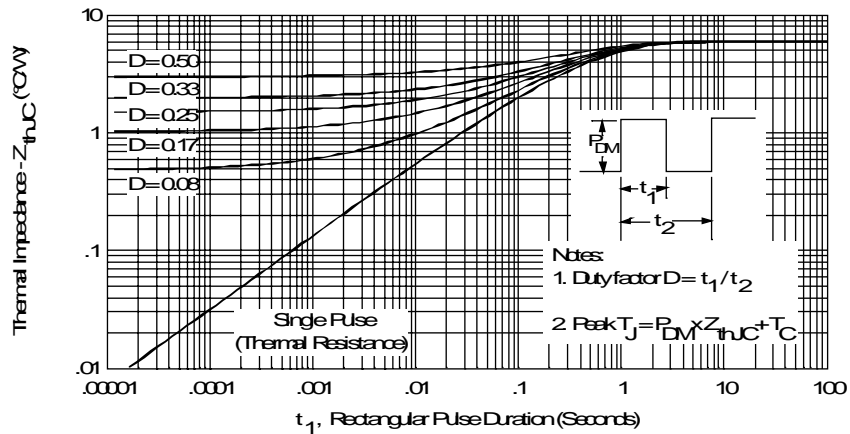


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

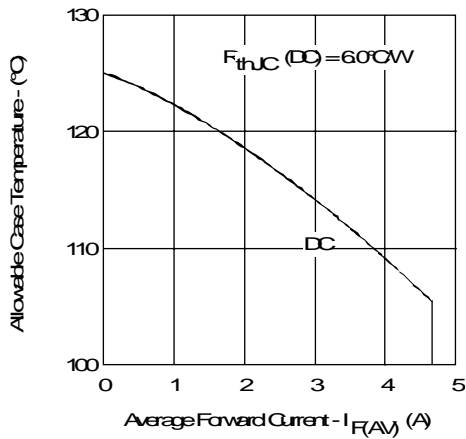


Fig.5-Maximum Allowable Case Temperature Vs. Average Forward Current

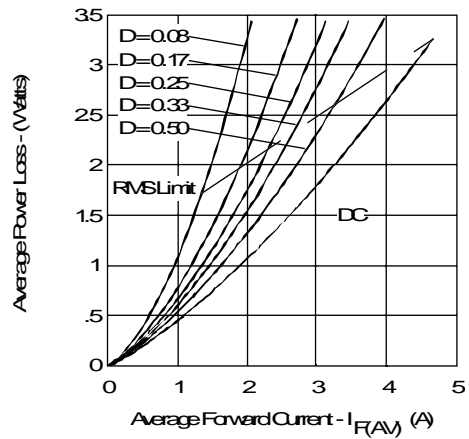


Fig.6-Forward Power Loss Characteristics

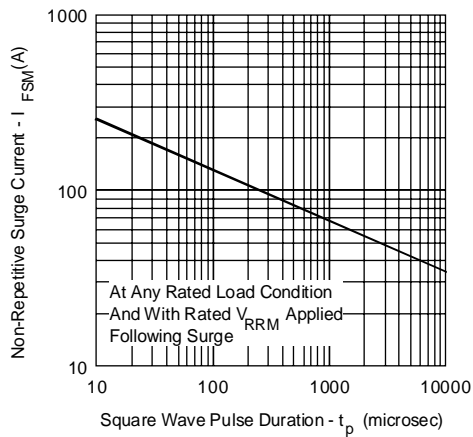


Fig.7-Maximum Non-Repetitive Surge Current