

Voltage Ratings

Part number	6CWQ05F	6CWQ06F
V_R Max. DC Reverse Voltage (V)	50	60
V_{RWM} Max. Working Peak Reverse Voltage (V)		

Absolute Maximum Ratings

Parameters	6CWQ..F	Units	Conditions	
$I_{F(AV)}$ Max. Average Forward Current * See Fig. 5	6.6	A	50% duty cycle @ $T_C = 92^\circ\text{C}$, rectangular waveform	
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg) * See Fig. 7	360	A	5 μs Sine or 3 μs Rect. pulse	Following any rated load condition and with rated V_{RWM} applied
	42		10ms Sine or 6ms Rect. pulse	

Electrical Specifications

Parameters	6CWQ..F	Units	Conditions	
V_{FM} Max. Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	0.58	V	@ 3A	$T_J = 25^\circ\text{C}$
	0.77	V	@ 6A	
	0.54	V	@ 3A	$T_J = 125^\circ\text{C}$
	0.67	V	@ 6A	
I_{RM} Max. Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	3	mA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
	30	mA	$T_J = 125^\circ\text{C}$	
C_T Typical Junction Capacitance (Per Leg)	150	pF	$V_R = 5V_{DC}$, (test signal range 100Khz to 1Mhz) 25°C	
L_S Typical Series Inductance (Per Leg)	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	6CWQ..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	5.0	$^\circ\text{C/W}$	DC operation	* See Fig. 4
R_{thJA} Max. Thermal Resistance Junction to Ambient	80	$^\circ\text{C/W}$	DC operation	PC Board mounted, printland = 20x20mm
wt Approximate Weight	0.3(0.01)	g(oz.)		
Case Style	D - PAK		Similar to TO-252AA	

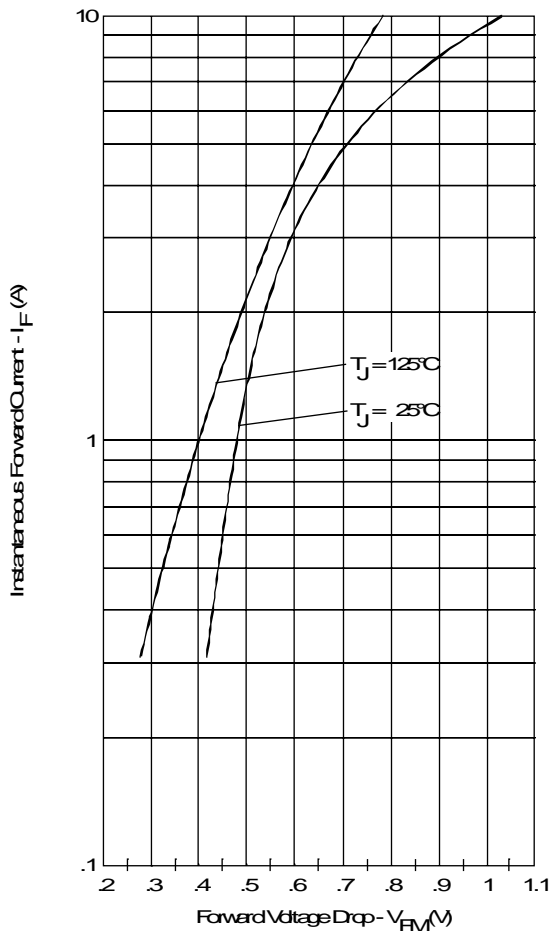


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

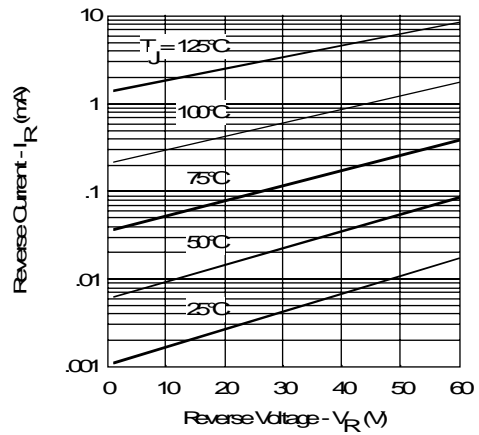


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

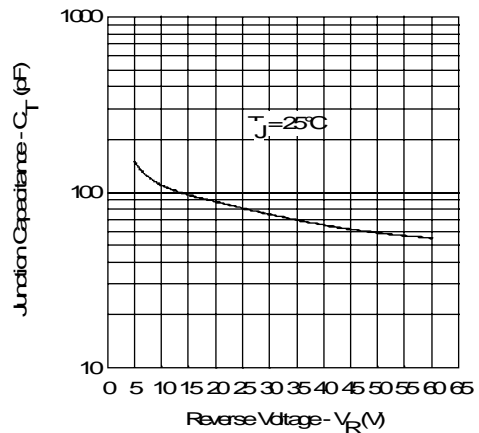


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

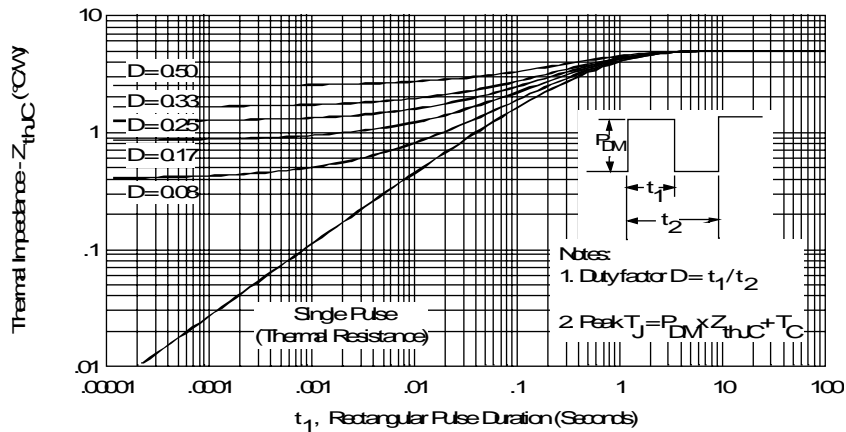


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

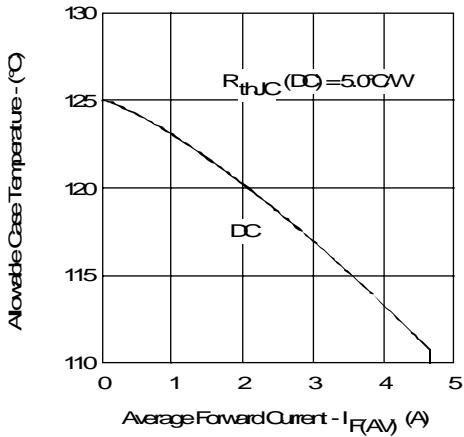


Fig.5- Max. Allowable Case Temperature Vs. Average Forward Current (PerLeg)

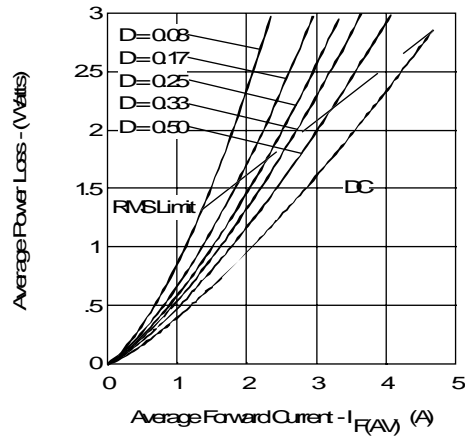


Fig.6- Forward Power Loss Characteristics (PerLeg)

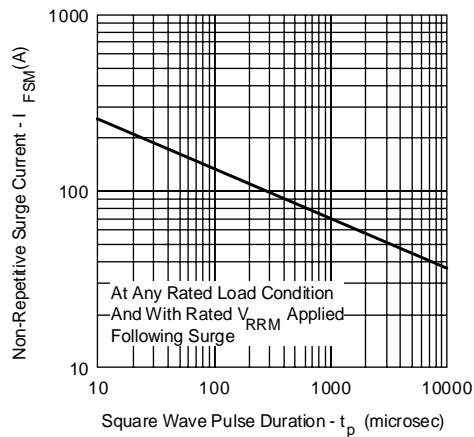


Fig.7- Max. Non-Repetitive Surge Current (PerLeg)