



Features

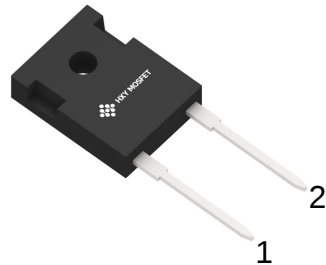
- 1700-Volt Schottky Rectifier
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F

Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives



TO-247-2L



Part Number	Package	Qty(PCS)
C6D05170H	TO-247-2L	30

Maximum Ratings ($T_c = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
V_{RRM}	Repetitive Peak Reverse Voltage	1700	V	
V_{RSM}	Surge Peak Reverse Voltage	1700	V	
I_F	Continuous Forward Current	26.5 13 5	A	$T_c=25^\circ\text{C}$ $T_c=135^\circ\text{C}$ $T_c=167^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	60	A	$T_c=25^\circ\text{C}$, $t_p = 10$ ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	120	A	$T_c=25^\circ\text{C}$, $t_p = 10$ ms, Half Sine Wave
P_{tot}	Power Dissipation	188 81	W	$T_c=25^\circ\text{C}$ $T_c=110^\circ\text{C}$
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$	
	TO-220 Mounting Torque	1	Nm	M3 Screw
$\int i^2 dt$	$i^2 dt$ value	72	A^2s	$T_c=25^\circ\text{C}$, $t_p = 10$ ms, Half Sine Wave



Electrical Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V_{DC}	DC Blocking Voltage	1700			V	
V_F	Forward Voltage		1.32 1.95	1.7 2.5	V	$I_F = 5\text{ A}$ $T_J = 25^\circ\text{C}$ $I_F = 5\text{ A}$ $T_J = 175^\circ\text{C}$
I_R	Reverse Current		0.3 2.43	50 100	μA	$V_R = 1700\text{ V}$ $T_J = 25^\circ\text{C}$ $V_R = 1700\text{ V}$ $T_J = 175^\circ\text{C}$
Q_C	Total Capacitive Charge		63		nC	$V_R = 1200\text{ V}$ $T_J = 25^\circ\text{C}$
C	Total Capacitance		641 48 34		pF	$V_R = 0\text{ V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$ $V_R = 400\text{ V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$ $V_R = 800\text{ V}$, $T_J = 25^\circ\text{C}$, $f = 1\text{ MHz}$
E_C	Capacitance Stored Energy		48		μJ	$V_R = 1200\text{ V}$

Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.8	$^\circ\text{C/W}$

Typical Performance

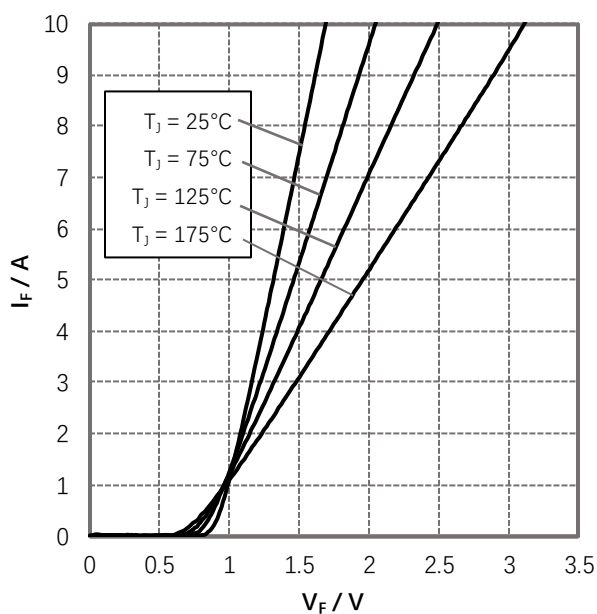


Figure 1. Forward Characteristics

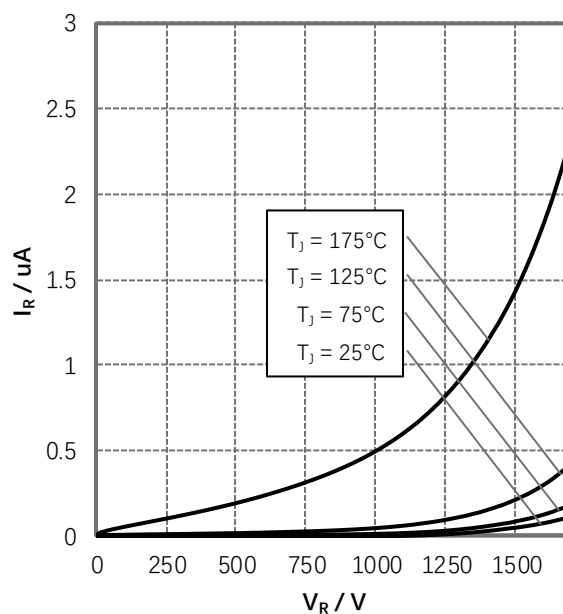


Figure 2. Reverse Characteristics

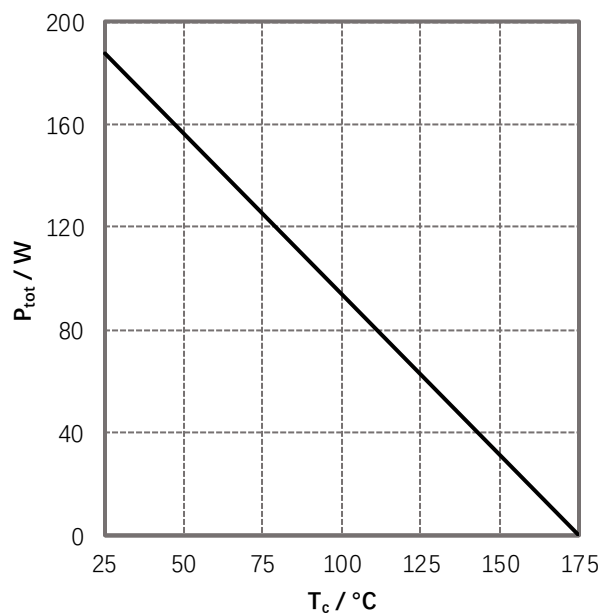


Figure 3. Power Derating

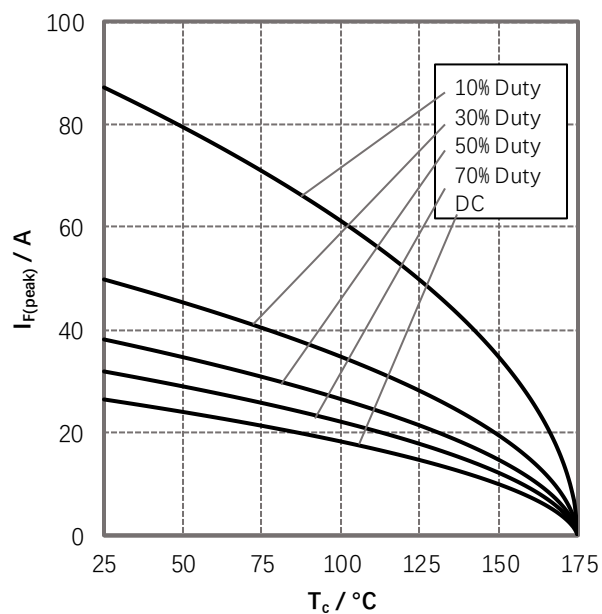


Figure 4. Current Derating

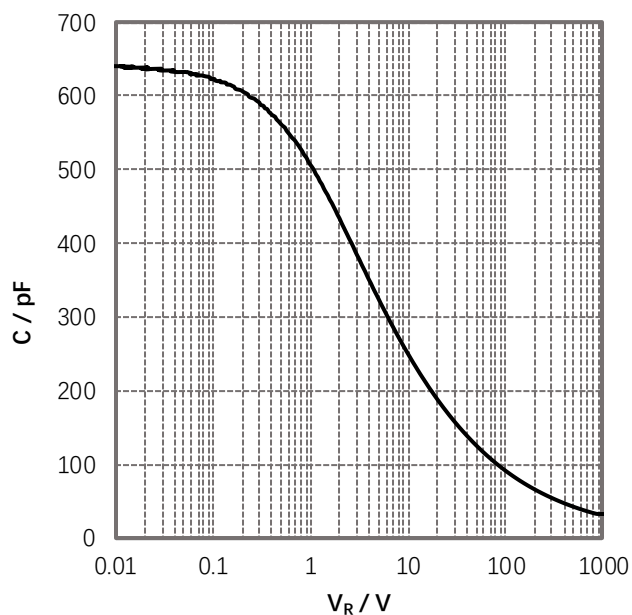


Figure 5. Capacitance vs. Reverse Voltage

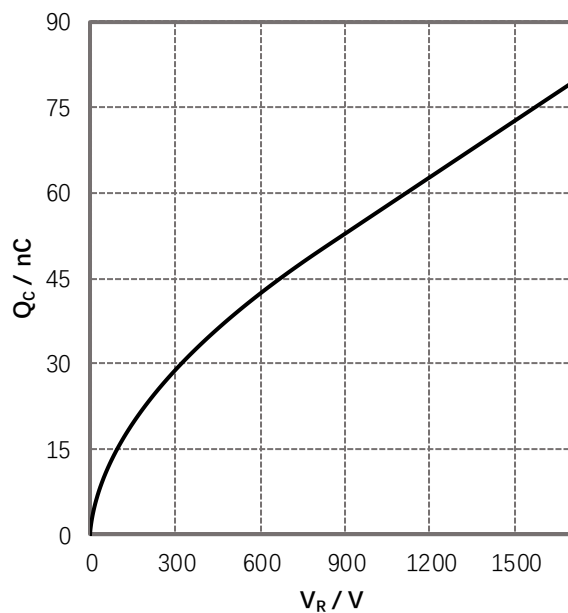


Figure 6. Total Capacitance Charge vs. Reverse Voltage

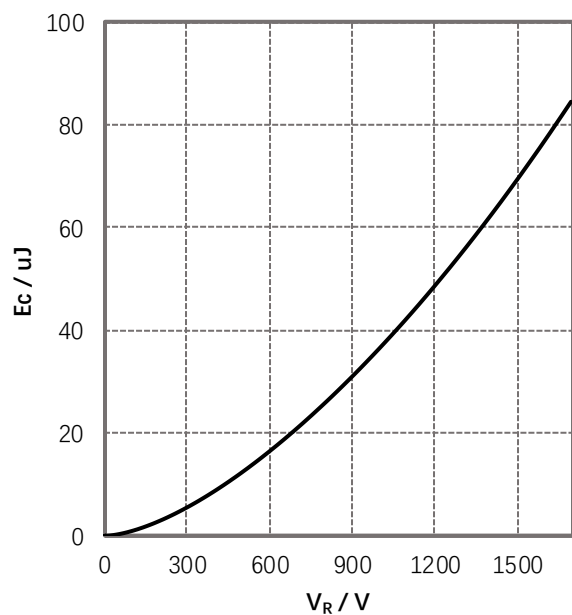


Figure 7. Capacitance Stored Energy

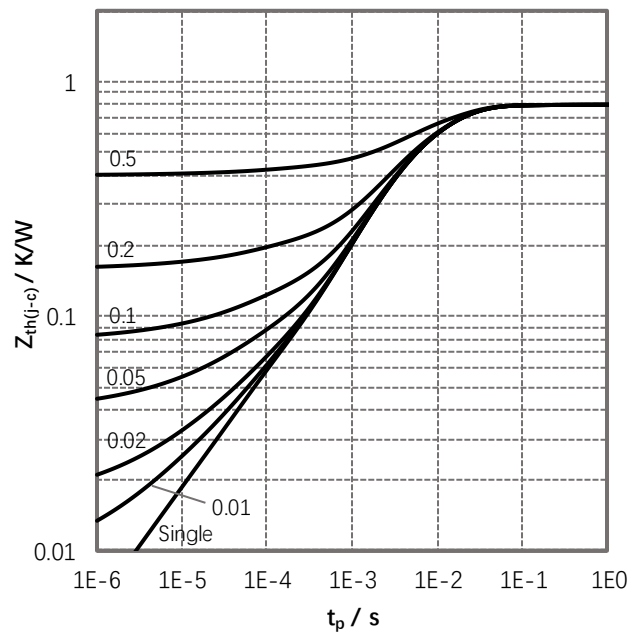
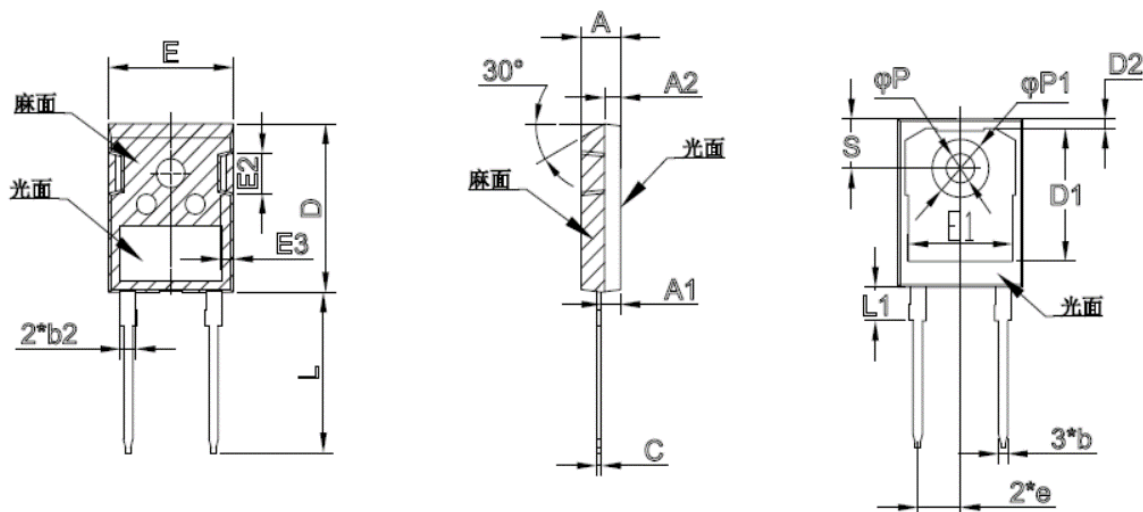


Figure 8. Transient Thermal Impedance



Package Information TO-247-2L

Unit:mm



	Min	Nom	Max		Min	Nom	Max
A	4.70	5.00	5.20	E1	13.06	13.26	13.56
A1	2.30		2.50	E2	4.90	5.00	5.10
A2	1.90	2.00	2.10	E3	1.50	1.60	1.70
b	1.10	1.20	1.30	e	5.34	5.44	5.54
b2		2.00		L	19.80	20.00	20.32
				L1		4.17	4.50
C	0.5	0.6	0.7	P	3.50	3.60	3.70
D	20.8	20.95	21.1	P1	7.00	7.19	7.40
D1		16.55		S	6.04	6.15	6.3
D2	0.95	1.17	1.35				
E	15.48	15.88	16.28				



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