

CM75TF-12H
Six-IGBT IGBTMOD™ H-Series Module
 75 Amperes/600 Volts

Absolute Maximum Ratings, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Ratings	Symbol	CM75TF-12H	Units
Junction Temperature	T_j	-40 to 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 125	$^\circ\text{C}$
Collector-Emitter Voltage (G-E SHORT)	V_{CES}	600	Volts
Gate-Emitter Voltage	V_{GES}	± 20	Volts
Collector Current	I_C	75	Amperes
Peak Collector Current	I_{CM}	150*	Amperes
Diode Forward Current	I_F	75	Amperes
Diode Forward Surge Current	I_{FM}	150*	Amperes
Power Dissipation	P_d	310	Watts
Max. Mounting Torque M4 Terminal Screws	-	13	in-lb
Max. Mounting Torque M5 Mounting Screws	-	17	in-lb
Module Weight (Typical)	-	540	Grams
V Isolation	V_{RMS}	2500	Volts

* Pulse width and repetition rate should be such that device junction temperature does not exceed the device rating.

Static Electrical Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Cutoff Current	I_{CES}	$V_{CE} = V_{CES}, V_{GE} = 0V$	-	-	1.0	mA
Gate Leakage Current	I_{GES}	$V_{GE} = V_{GES}, V_{CE} = 0V$	-	-	0.5	μA
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$I_C = 7.5\text{mA}, V_{CE} = 10V$	4.5	6.0	7.5	Volts
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 75A, V_{GE} = 15V$	-	2.1	2.8**	Volts
		$I_C = 75A, V_{GE} = 15V, T_j = 150^\circ\text{C}$	-	2.15	-	Volts
Total Gate Charge	Q_G	$V_{CC} = 300V, I_C = 75A, V_{GS} = 15V$	-	225	-	nC
Diode Forward Voltage	V_{FM}	$I_E = 75A, V_{GS} = 0V$	-	-	2.8	Volts

** Pulse width and repetition rate should be such that device junction temperature rise is negligible.

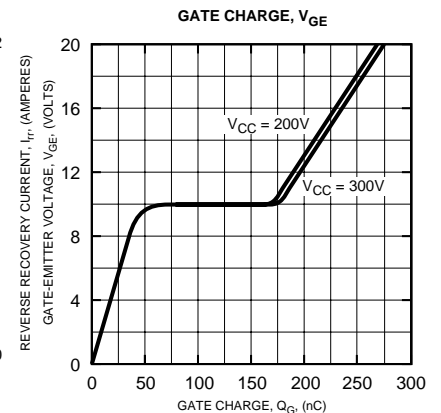
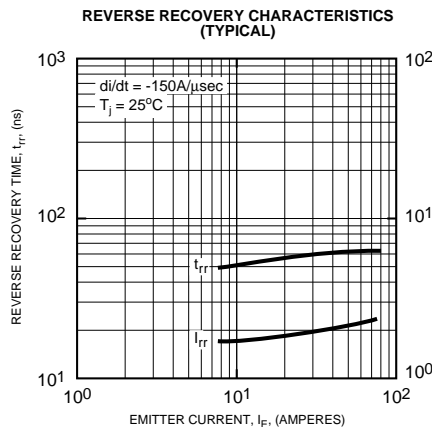
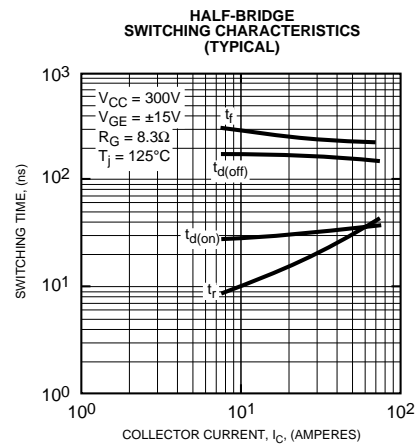
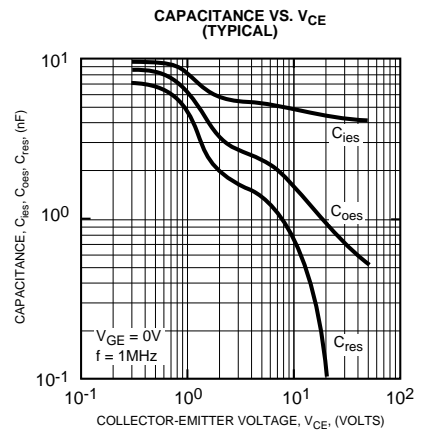
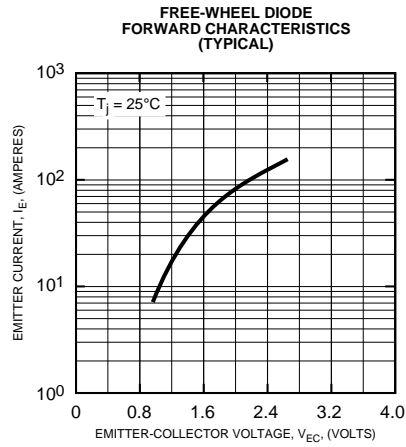
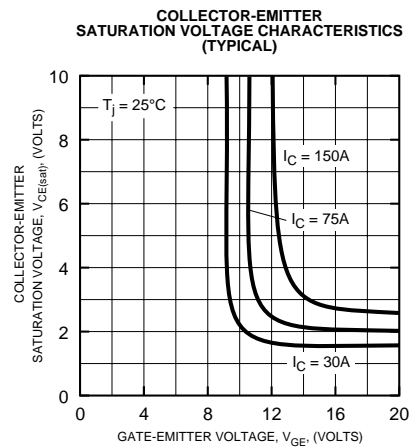
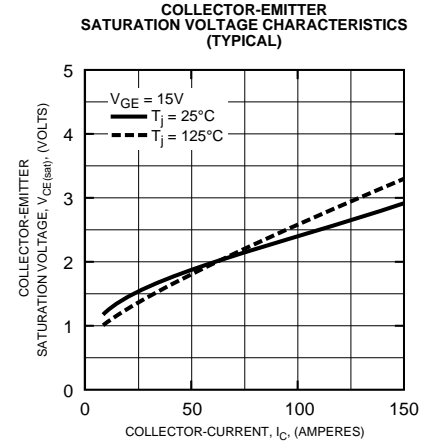
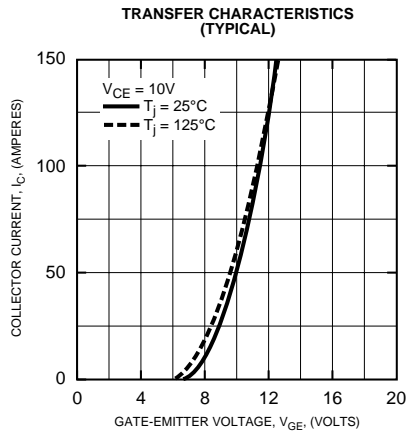
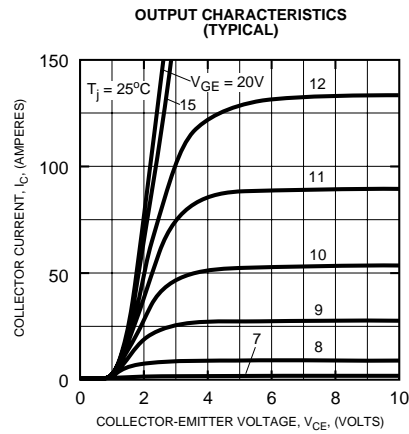
Dynamic Electrical Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Capacitance	C_{ies}		-	-	7.5	nF
Output Capacitance	C_{oes}	$V_{GE} = 0V, V_{CE} = 10V, f = \text{MHz}$	-	-	2.6	nF
Reverse Transfer Capacitance	C_{res}		-	-	1.5	nF
Resistive	Turn-on Delay Time	$V_{CC} = 300V, I_C = 75A,$	-	-	120	ns
Load	Rise Time					
Switching	Turn-off Delay Time	$V_{GE1} = V_{GE2} = 15V, R_G = 8.3\Omega$	-	-	200	ns
	Times					
Diode Reverse Recovery Time	t_{rr}	$I_E = 75A, di_E/dt = -150A/\mu\text{s}$	-	-	110	ns
Diode Reverse Recovery Charge	Q_{rr}	$I_E = 75A, di_E/dt = -150A/\mu\text{s}$	-	0.20	-	μC

Thermal and Mechanical Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	Per IGBT	-	-	0.40	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	Per FWDi	-	-	0.90	$^\circ\text{C/W}$
Contact Thermal Resistance	$R_{th(c-f)}$	Per Module, Thermal Grease Applied	-	-	0.033	$^\circ\text{C/W}$

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