

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Powerex Inc.](#)
[CM100BU-12H](#)

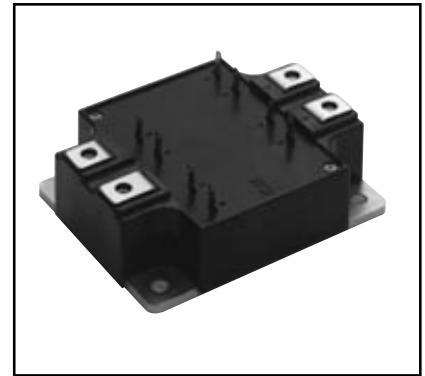
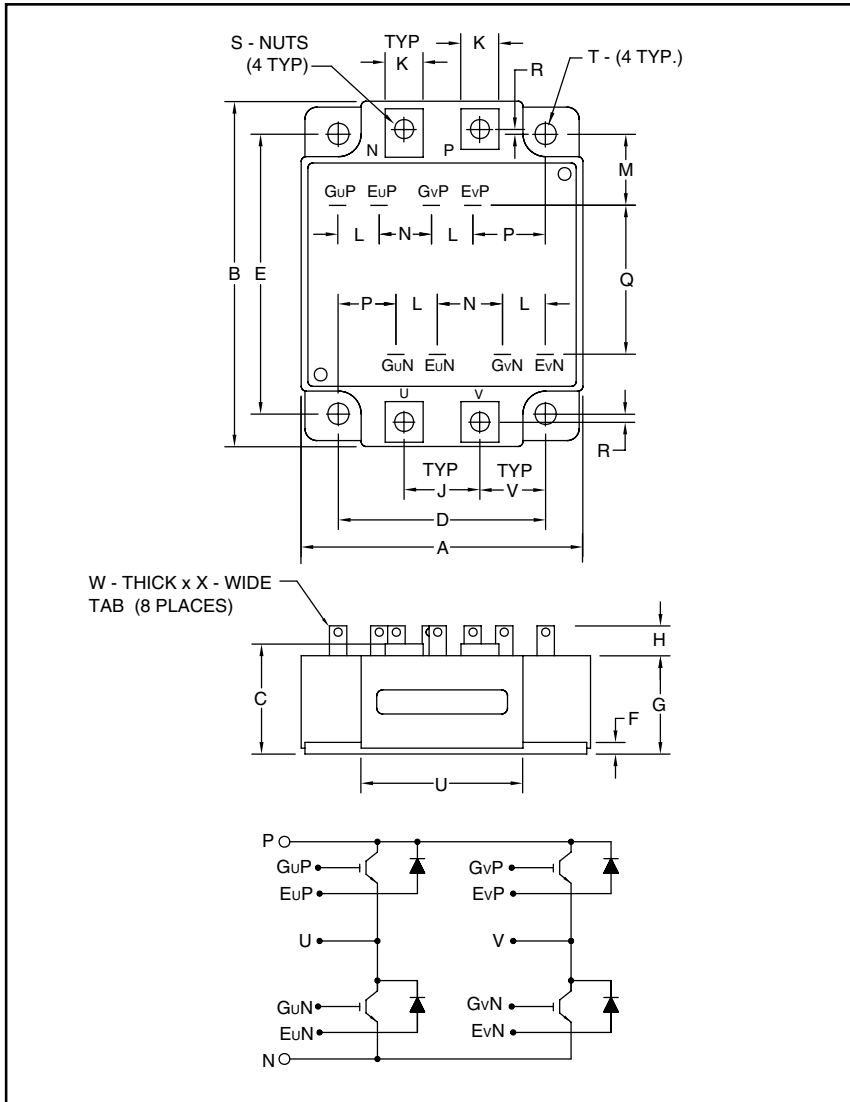
For any questions, you can email us directly:
sales@integrated-circuit.com



Powerex, Inc., 200 E. Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CM100BU-12H

**Four IGBTMOD™
U-Series Module
100 Amperes/600 Volts**



Description:

Powerex IGBTMOD™ Modules are designed for use in switching applications. Each module consists of four IGBT Transistors in an H-Bridge configuration, with each transistor having a reverse-connected super-fast recovery free-wheel diode. All components and interconnects are isolated from the heat sinking baseplate, offering simplified system assembly and thermal management.

Features:

- Low Drive Power
- Low $V_{CE(sat)}$
- Discrete Super-Fast Recovery (70ns) Free-Wheel Diode
- Isolated Baseplate for Easy Heat Sinking

Applications:

- AC Motor Control
- Motion/Servo Control
- UPS
- Welding Power Supplies
- Laser Power Supplies

Ordering Information:

Example: Select the complete module number you desire from the table - i.e. CM100BU-12H is a 600V (V_{CES}), 100 Ampere Four-IGBT IGBTMOD™ Power Module.

Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	2.83	72.0
B	3.58	91.0
C	1.16 +0.04/-0.02	29.5 +1.0/-0.5
D	2.17±0.01	55.0±0.25
E	2.91±0.01	74.0±0.25
F	0.16	4.0
G	1.02	26.0
H	0.31	8.1
J	0.79	20.0
K	0.39	10.0
L	0.43	11.0

Dimensions	Inches	Millimeters
M	0.74	18.7
N	0.75	19.1
P	0.57	14.4
Q	1.55	39.3
R	0.05	1.25
S	M4	M4
T	0.22 Dia.	5.5 Dia.
U	1.61	41.0
V	0.69	17.5
W	0.02	0.5
X	0.110	2.79

Type	Current Rating Amperes	V_{CES} Volts (x 50)
CM	100	12



Powerex, Inc., 200 E. Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CM100BU-12H
Four IGBTMOD™ U-Series Module
 100 Amperes/600 Volts

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

Ratings	Symbol	CM100BU-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 (C-E SHORT)	V_{GES}	± 20	Volts
Collector Current ($T_c = 25^\circ\text{C}$)	I_C	100	Amperes
Peak Collector Current ($T_j \leq 150^\circ\text{C}$)	I_{CM}	200*	Amperes
Emitter Current** ($T_c = 25^\circ\text{C}$)	I_E	100	Amperes
Peak Emitter Current**	I_{EM}	200*	Amperes
Maximum Collector Dissipation ($T_c = 25^\circ\text{C}$)	P_C	400	Watts
Mounting Torque, M4 Main Terminal	–	15	in-lb
Mounting Torque, M5 Mounting	–	31	in-lb
Weight	–	390	Grams
Isolation Voltage (Main Terminal to Baseplate, AC 1 min.)	V_{ISO}	2500	Volts

* Pulse width and repetition rate should be such that the device junction temperature (T_j) does not exceed $T_{j(\text{max})}$ rating.

**Represents characteristics of the anti-parallel, emitter-to-collector free-wheel diode (FWDi).

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Collector-Cutoff Current	I_{CES}	$V_{\text{CE}} = V_{\text{CES}}, V_{\text{GE}} = 0\text{V}$	–	–	1	mA
Gate Leakage Current	I_{GES}	$V_{\text{GE}} = V_{\text{GES}}, V_{\text{CE}} = 0\text{V}$	–	–	0.5	μA
Gate-Emitter Threshold Voltage	$V_{\text{GE(th)}}$	$I_C = 10\text{mA}, V_{\text{CE}} = 10\text{V}$	4.5	6	7.5	Volts
Collector-Emitter Saturation Voltage	$V_{\text{CE(sat)}}$	$I_C = 100\text{A}, V_{\text{GE}} = 15\text{V}, T_j = 25^\circ\text{C}$	–	2.4	3.0	Volts
		$I_C = 100\text{A}, V_{\text{GE}} = 15\text{V}, T_j = 125^\circ\text{C}$	–	2.6	–	Volts
Total Gate Charge	Q_G	$V_{\text{CC}} = 300\text{V}, I_C = 100\text{A}, V_{\text{GE}} = 15\text{V}$	–	200	–	nC
Emitter-Collector Voltage*	V_{EC}	$I_E = 100\text{A}, V_{\text{GE}} = 0\text{V}$	–	–	2.6	Volts

* Pulse width and repetition rate should be such that the device junction temperature (T_j) does not exceed $T_{j(\text{max})}$ rating.

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units	
Input Capacitance	C_{ies}		–	–	8.8	nf	
Output Capacitance	C_{oes}	$V_{\text{CE}} = 10\text{V}, V_{\text{GE}} = 0\text{V}$	–	–	4.8	nf	
Reverse Transfer Capacitance	C_{res}		–	–	1.3	nf	
Resistive	Turn-on Delay Time	$t_{\text{d(on)}}$	$V_{\text{CC}} = 300\text{V}, I_C = 100\text{A},$	–	–	100	ns
	Rise Time			$V_{\text{GE1}} = V_{\text{GE2}} = 15\text{V},$	–	–	250
Switch	Turn-off Delay Time	$t_{\text{d(off)}}$	$R_G = 6.3\Omega, \text{Resistive}$	–	–	200	ns
	Fall Time			t_f	–	–	300
Diode Reverse Recovery Time	t_{rr}	$I_E = 100\text{A}, di_E/dt = -200\text{A}/\mu\text{s}$	–	–	160	ns	
Diode Reverse Recovery Charge	Q_{rr}	$I_E = 100\text{A}, di_E/dt = -200\text{A}/\mu\text{s}$	–	0.24	–	μC	

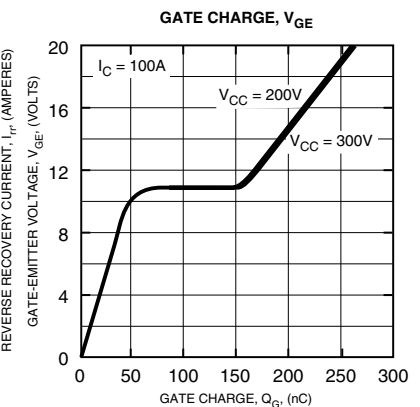
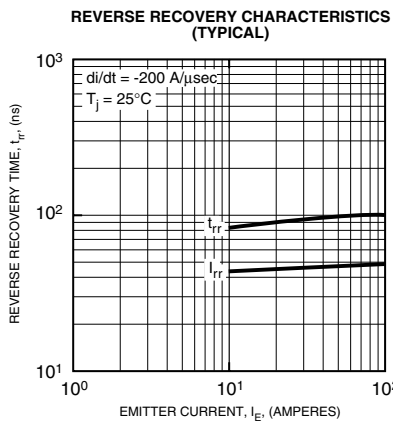
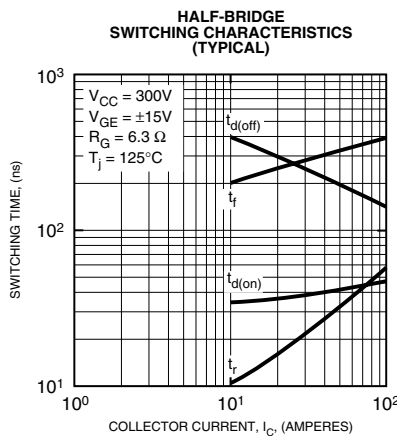
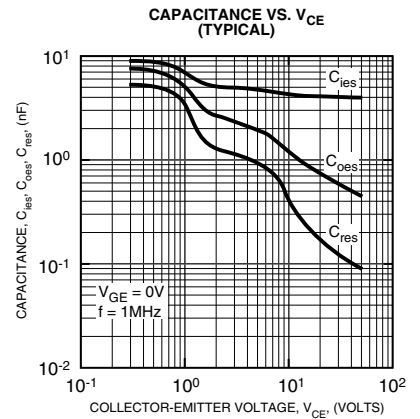
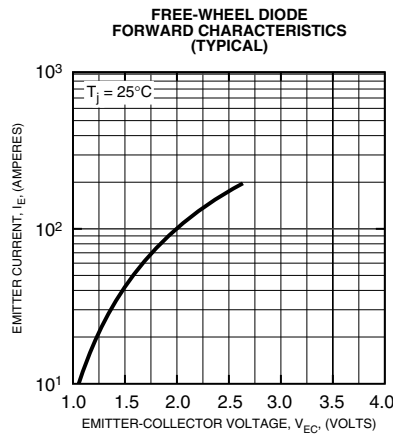
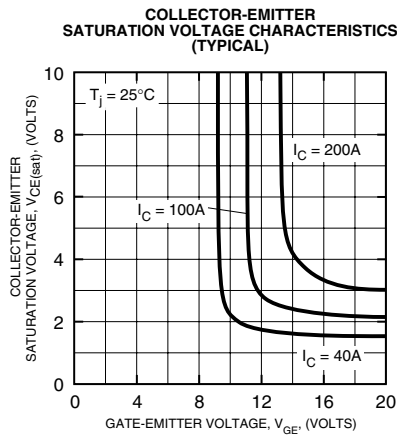
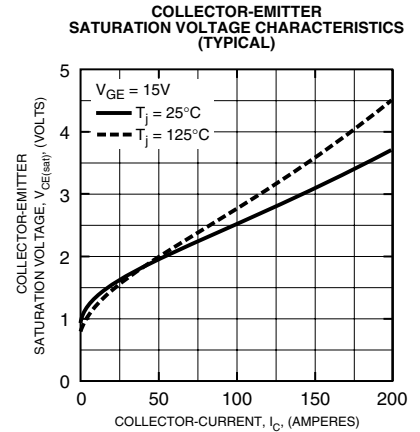
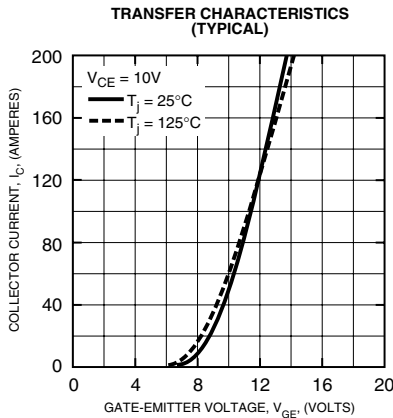
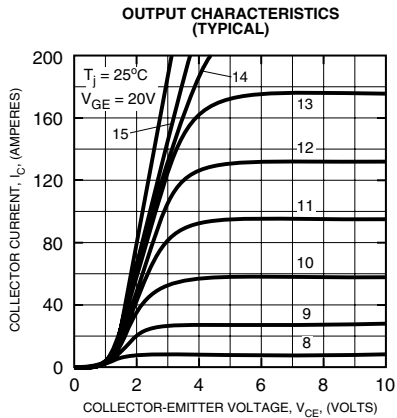
Thermal and Mechanical Characteristics, $T_j = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{\text{th(j-c)Q}}$	Per IGBT 1/4 Module	–	–	0.31	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\text{th(j-c)D}}$	Per FWDi 1/4 Module	–	–	0.7	$^\circ\text{C}/\text{W}$
Contact Thermal Resistance	$R_{\text{th(c-f)}}$	Per Module, Thermal Grease Applied	–	0.025	–	$^\circ\text{C}/\text{W}$



Powerex, Inc., 200 E. Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CM100BU-12H
Four IGBTMOD™ U-Series Module
 100 Amperes/600 Volts





Powerex, Inc., 200 E. Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

CM100BU-12H
Four IGBTMOD™ U-Series Module
 100 Amperes/600 Volts

