

Preliminary Data Sheet

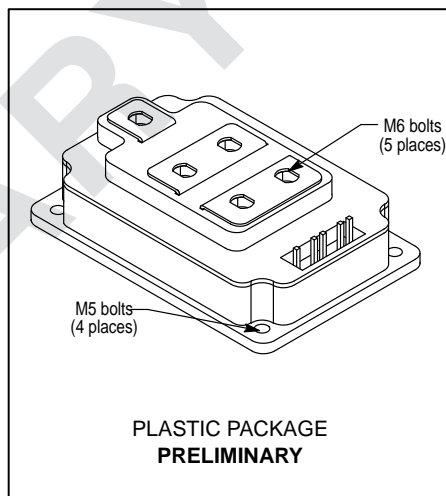
Hybrid Power Module

High Current IGBT Module

- 400 Amp, 600 Volt IGBT Half-Bridge
- Low On-Voltage, High Speed IGBTs
- Excellent Short Circuit Capability
- Fast Soft Recovery Diodes
- Low Inductance Package
- Metal Matrix Composite Packaging Technology

MHPM2A400A60M

**400 AMP, 600 VOLT
HYBRID POWER MODULE**



IGBTs ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Breakdown Voltage	$V_{GE} = 0$	BV_{ces}	600	—	—	V
On Voltage	$I_C = 400\text{ A}$ 1% duty cycle	$V_{CE(on)}$	—	2.2	2.7	V
Short Circuit Capability	$V_{CE} = 400\text{ V}$ $t_c = 85^\circ\text{C}$	tsc	10	20*	—	μs
Fall Time	$I_C = 400\text{ A}$ $V_C = 400\text{ V}$	t _f	—	200*	350*	ns
Thermal Resistance		$R_{\theta JC}$	—	0.08*	0.12*	$^\circ\text{C/W}$

Rectifier

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Breakdown Voltage		B_V	600	—	—	V
Forward Voltage	$I_f = 400\text{ A}$ 1% duty cycle	f	—	1.8*	2.0*	V
Reverse Recovery	$I_f = 400\text{ V}$ $di/dt = 1\text{ A/ns}^*$ $V_r = 400\text{ V}$	t _{rr}	—	120*	200*	ns
Softness Factor	*	t _b /t _a	0.5*	1*	—	ns/ns
Thermal Resistance		$R_{\theta JC}$	—	0.15*	0.23*	$^\circ\text{C/W}$

* Estimated data, values subject to change

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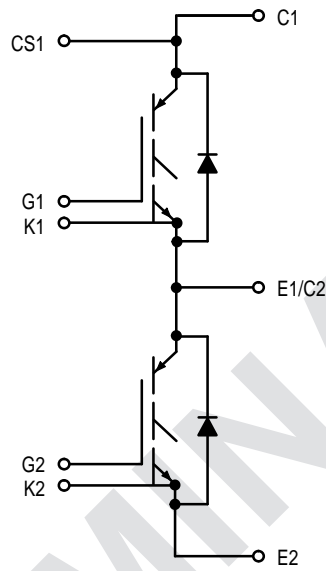



Figure 1. Detailed Circuit Schematic

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