YK ELECTRONICS
(주)영광산전

DGM75D12AV1

"HALF-BRIDGE" IGBT

V_{CES} = 1200V
Ic= 75A
$V_{CE(sat)}$ typ. = 1.8V

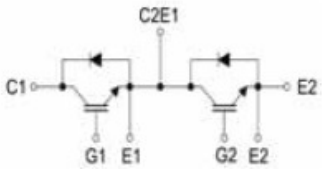
Feature

- IGBT New Technology
- Low $V_{CE(sat)}$
- Low Turn-off losses
- Short tail current
- Positive temperature coefficient

Application

- AC & DC Motor controls
- General purpose inverters
- Optimized for high current inverter
- Servo controls
- UPS, Robotics

Package : V1



Absolute Maximum Ratings @ Tj=25℃ (Per Leg)

Symbol	Parameter	Condition	Ratings	Unit
V_{CES}	Collector to emitter voltage	V_{GS}=0V, Ic=3mA	1200	V
V_{GE}	Gate emitter voltage		± 20	V
Ic	Continuous collector current	Tc = 75℃ (25℃)	75 (100)	A
I_{CP}	Pulsed collector current	Tc = 25℃	200	A
I_F	Diode continuous forward current	Tc = 75℃ (25℃)	75 (100)	A
I_{FM}	Diode maximum forward current	Tc = 25℃	200	A
V_{iso}	Isolation voltage test	AC @ 1 minute	2500	V
Tj	Junction temperature		-40 ~ 150	℃
Tstg	Storage temperature		-40 ~ 125	℃
Weight	Weight of module		190	g
Md	Mounting torque with screw : M5		2.0	N.m
	Terminal connection torque : M5		2.0	N.m

Static Characteristics @ Tj = 25℃ (unless otherwise specified)

Parameters		Min	Typ	Max	Unit	Test conditions
$V_{CE(sat)}$	Collector to emitter saturation voltage	1.3	1.8	2.3	V	Ic = 75A, V_{GE} = 15V
$V_{GE(th)}$	Gate threshold voltage	5.0	5.8	6.5		V_{CE} = V_{GE}, Ic = 3mA
I_{CES}	Zero gate voltage collector current	—	—	1.0	mA	V_{GE} = 0V, V_{CE} = 1200V
I_{GES}	Gate to emitter leakage current	—	—	600	nA	V_{CE} = 0V, V_{GE} = 20V
V_F	Diode forward voltage drop	1.3	1.7	2.1	V	I_F = 75A

Electrical Characteristics (IGBT / DIODE) @ Tj = 25℃ (unless otherwise specified)

Parameters		Min	Typ	Max	Unit	Test conditions
C_{iss}	Input capacitance	—	5345	—	pF	V_{CE} = 25V , V_{GE} = 0V f = 1 MHz
C_{oss}	Output capacitance	—	280	—		
C_{rss}	Reverse transfer capacitance	—	242	—		
$t_{d(on)}$	Turn-on delay time	—	285	—	ns	Inductive Switching (125℃) V_{CC} = 600V I_C = 75A, V_{GE} = ± 15V R_G = 4.7Ω
t_r	Rise time	—	45	—		
$t_{d(off)}$	Turn-off delay time	—	520	—		
t_f	Fall time	—	90	—		
V_{BR}	Maximum peak repetitive reverse voltage	1200	—	—	V	I_R = 4㎃
I_{RM}	Maximum reverse leakage current	—	—	250	㎂	V_R = 1200V
t_{rr}	Reverse recovery time	—	170	—	㎱	I_F = 100A, V_R = 600V
Q_{rr}	Reverse recovery charge	—	7	—	㎌	di / dt = 2000A /㎲

Thermal Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
$R_{\theta JC}$	Junction-to-Case (IGBT Part, Per 1/2 Module)	-	-	0.35	℃/W
$R_{\theta JC}$	Junction-to-Case (Diode Part, Per 1/2 Module)	-	-	0.58	
$R_{\theta CS}$	Case-to-Heat Sink (Conductive grease applied)	-	0.05	-	

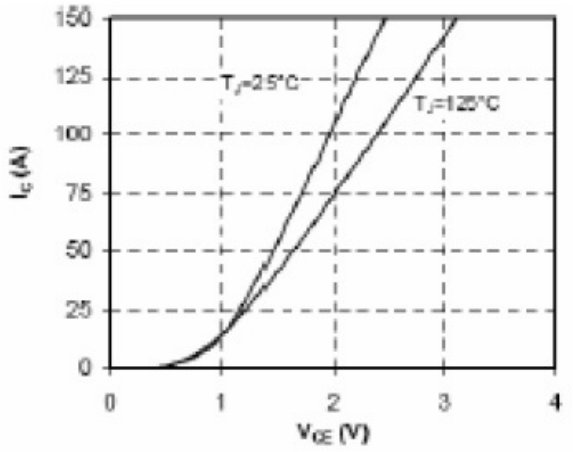


Fig 1. Typ. IGBT Output Characteristics

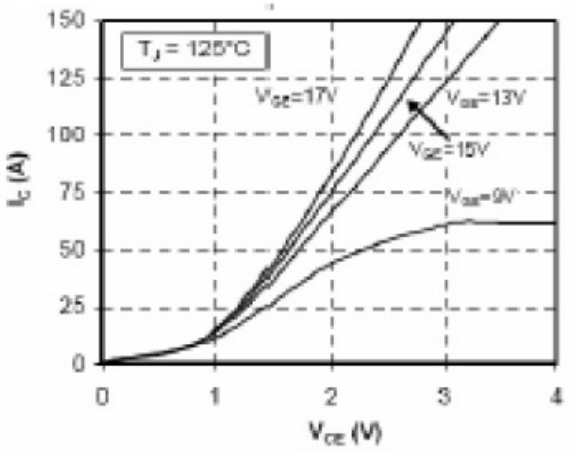


Fig 2. Typ. IGBT Output Characteristics

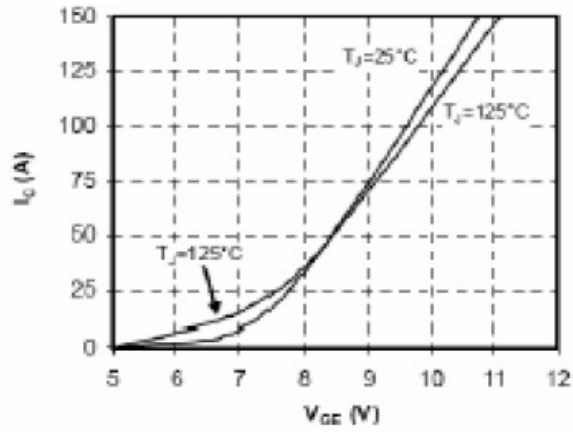


Fig 3. Typ. Transfer Characteristics

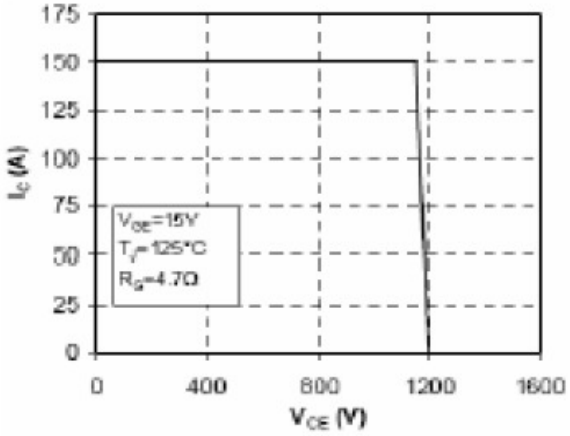


Fig 4. Reverse Bias Safe Operation Area

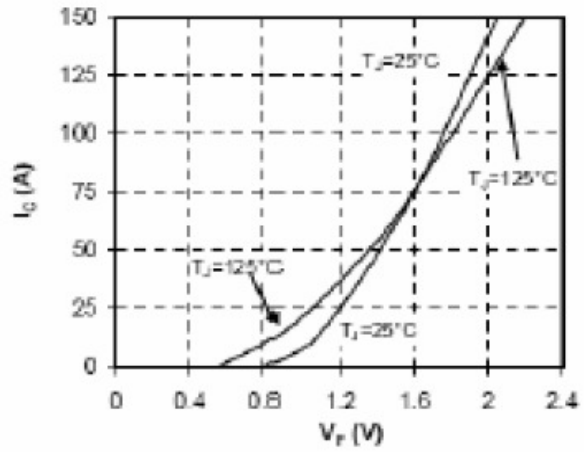


Fig 5. Forward Characteristics of Diode

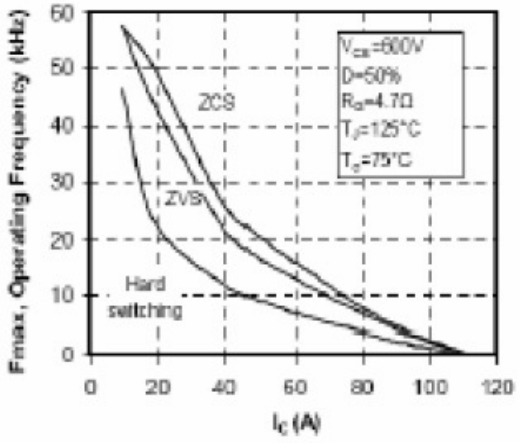
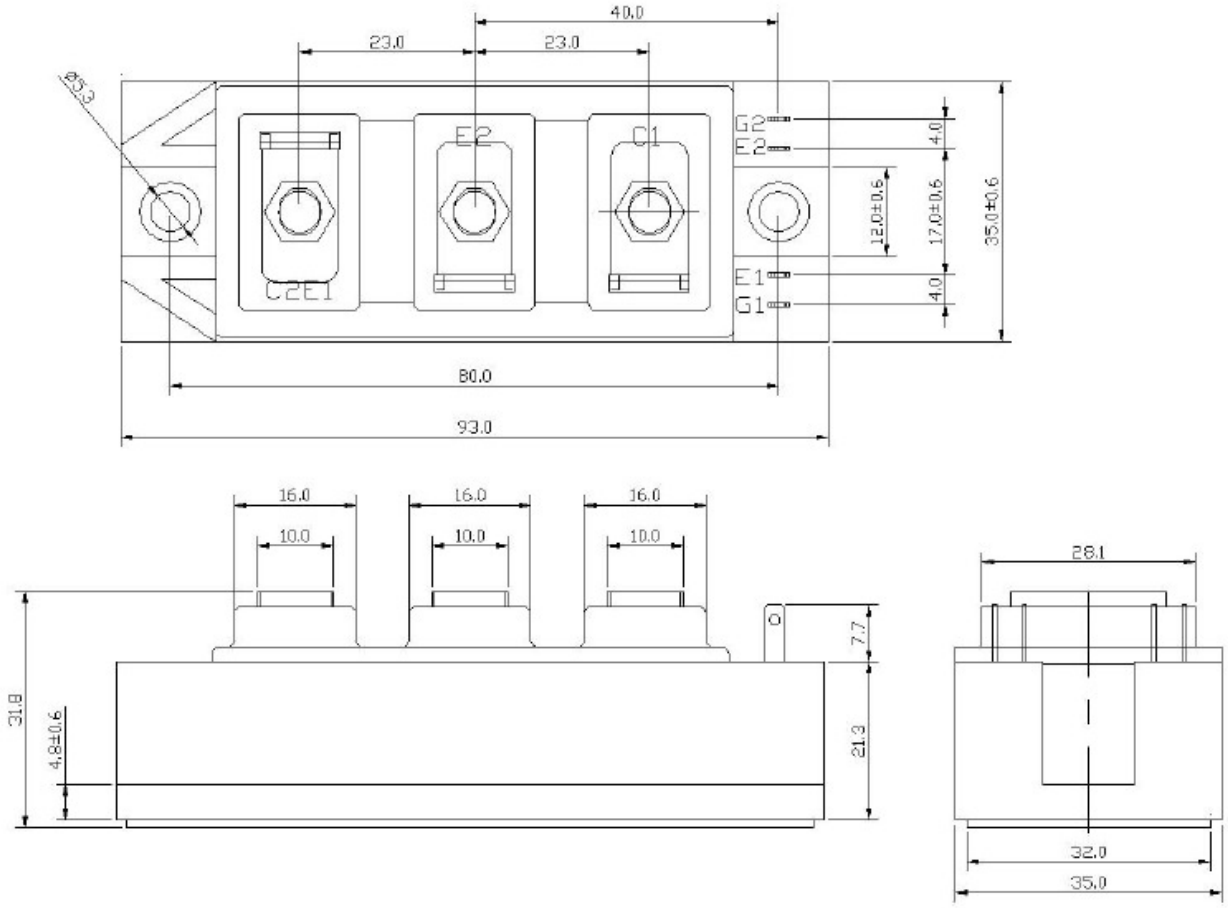


Fig 6. Operating Frequency vs. Collector Current

Package Outline (dimensions in mm)



* Data and specifications subject to change without notice.

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