MG300J2YS40

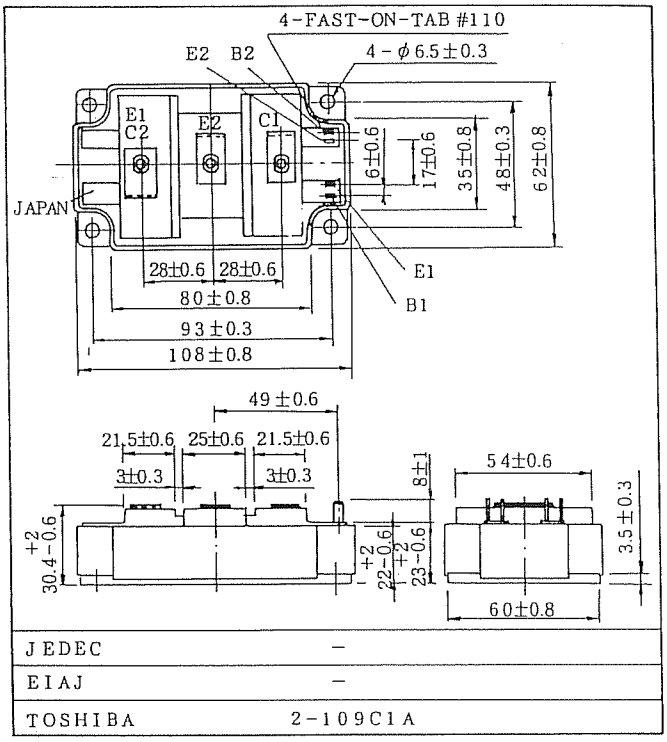
SILICON N CHANNEL IGBT

HIGH POWER SWITCHING APPLICATIONS.

MOTOR CONTROL APPLICATIONS.

- High Input Impedance
- High Speed : t_f=0.35μs (Max.)
  t_{rr}=0.15μs (Max.)
- Low Saturation Voltage
  : $V_{CE(sat)}$=3.5V (Max.)
- Enahncement-Mode
- Includes a Complete Half Bridge in One Package
- The Electrodes are Isolated from Case.

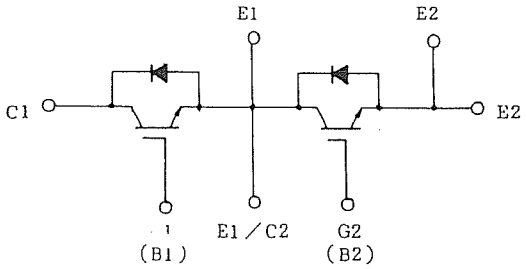
Unit in mm



JEDEC	–
EIAJ	–
TOSHIBA	2-109C1A

Weight: g

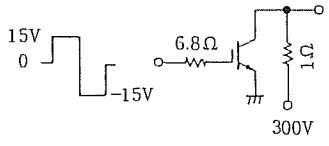
EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collector Current	DC	I_C	300	A
	1ms	I_{CP}	600	
Forward Current	DC	I_F	300	A
	1ms	I_{FM}	600	
Collector Power Dissipation (Tc=25°C)		P_C	1200	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-40~125	°C
Isolation Voltage		V_{Isol}	2500 (AC 1 minute)	V
Screw Torque (Terminal/Mounting)		–	3/3	N.m

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	$V_{GE}=\pm 20V$, $V_{CE}=0$	–	–	± 500	nA
Collector Cut-off Current		I_{CES}	$V_{CE}=600V$, $V_{GE}=0$	–	–	2.0	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CES}$	$I_C=10mA$, $V_{GE}=0$	600	–	–	V
Gate-Emitter Cut-off Voltage		$V_{GE(off)}$	$I_C=300mA$, $V_{CE}=5V$	3.0	–	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=300A$, $V_{GE}=15V$	–	2.7	3.5	V
Input Capacitance		C_{ies}	$V_{CE}=10V$, $V_{GE}=0$, f=1MHz	–	27200	–	pF
Switching Time	Rise Time	t_r		–	0.3	0.6	μs
	Turn-on Time	t_{on}		–	0.4	0.8	
	Fall Time	t_f		–	0.18	0.35	
	Turn-off Time	t_{off}		–	0.6	1.00	
Forward Voltage		V_F	$I_F=300A$, $V_{GE}=0$	–	1.7	2.5	V
Reverse Recovery Time		t_{rr}	$I_F=300A$, $V_{GE}=-10V$ $di/dt=200A/\mu s$	–	0.08	0.15	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	–	–	0.104	°C/W
			Diode	–	–	0.25	