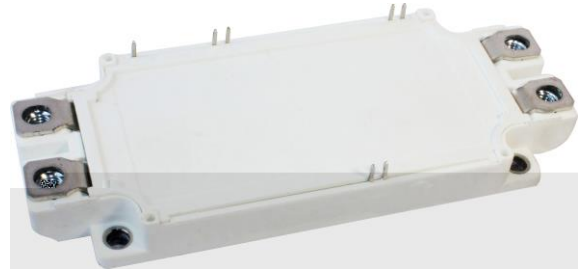


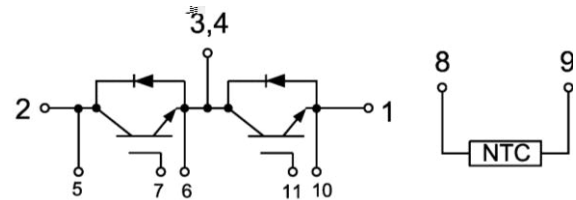
Features

- Trench & Field Stop IGBT
- Short Circuit Rated 10 s
- Low Switching Loss
- 100% RBSOA Tested 2xI_C
- Low Stray Inductance
- Copper Wire Bonding on Power Terminal
- Lead Free, Compliant with RoHS Requirement



Applications

- Hybrid Electrical Vehicles(H)EV
- Automotive Applications
- Commercial Agriculture Vehicles
- Motor Drives



IGBT, Inverter

Maximum Rated Values(T_C=25 unless otherwise specified)

V _{CES}	Collector-Emitter Blocking Voltage		1200	V
V _{GES}	Gate-Emitter Voltage		±20	V
I _C	Continuous Collector Current	T _C = 100°C	600	A
		T _C = 25°C	980	A
I _{CM}	Peak Collector Current Repetitive	T _J = 175	1200	A
t _{sc}	Short Circuit Withstand Time		>10	
P _D	Maximum Power Dissipation (IGBT)	T _C = 25°C T _{Jmax} =175	3330	W

Electrical Characteristics of IGBT ($T_C=25$ unless otherwise specified)

Static Characteristics

Symbol	Description	Conditions	Min	Typ	Max	Unit
$V_{GE(th)}$	Gate-Emitter Threshold Voltage	$I_C = 12 \text{ mA}$, $V_{CE} = V_{GE}$	4.5	5.5	6.5	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 600A$, $V_{GE} = 15V$ $T_J = 25$		1.70	2.00	V

Diode, Inverter

Maximum Rated Values ($T_C=25$ unless otherwise specified)

V_{RRM}	Repetitive Peak Reverse Voltage	1200	V
I_F	Diode Continuous Forward Current	600	A
I_{FM}	Peak FWD Current Repetitive	1200	A

Electrical Characteristics of FWD ($T_C=25^{\circ}C$ unless otherwise specified)

Symbol	Description	Conditions	Min
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Module

Symbol	Description	Min	Typ	Max	Unit
V _{iso}	Isolation Voltage (All Terminals Shorted) f = 50Hz, 1minute	2500			V
T _J	Maximum Junction Temperature			175	
T _{JOP}	Maximum Operating Junction Temperature Range	-40		+150	
T _{stg}	Storage Temperature	-40		+125	
CTI	Comparative Tracking Index	200			V
R	Case-To-Sink Thermally (Conductive Grease Applied)		0.02		°C/W
M	Power Terminals Screw:M5	3.0		5.0	N·m
M	Mounting Screw:M6	4.0		6.0	N·m
G	Weight		330		g

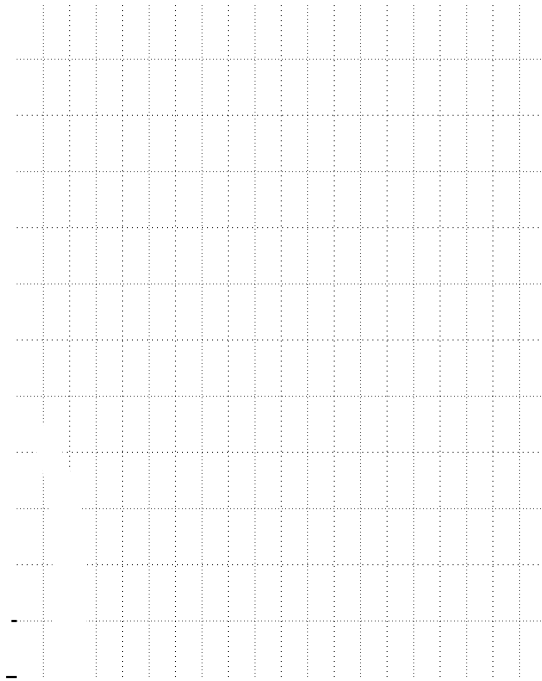


Fig.1 Typical Saturation Voltage Characteristics

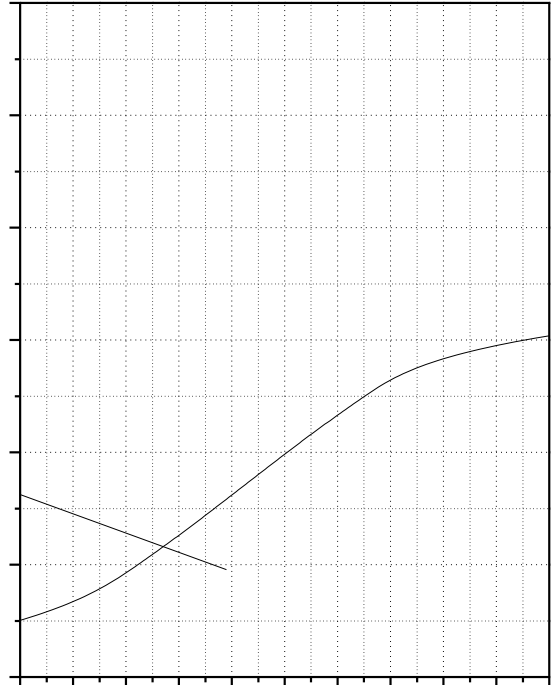


Fig.2 Typical Output Characteristics

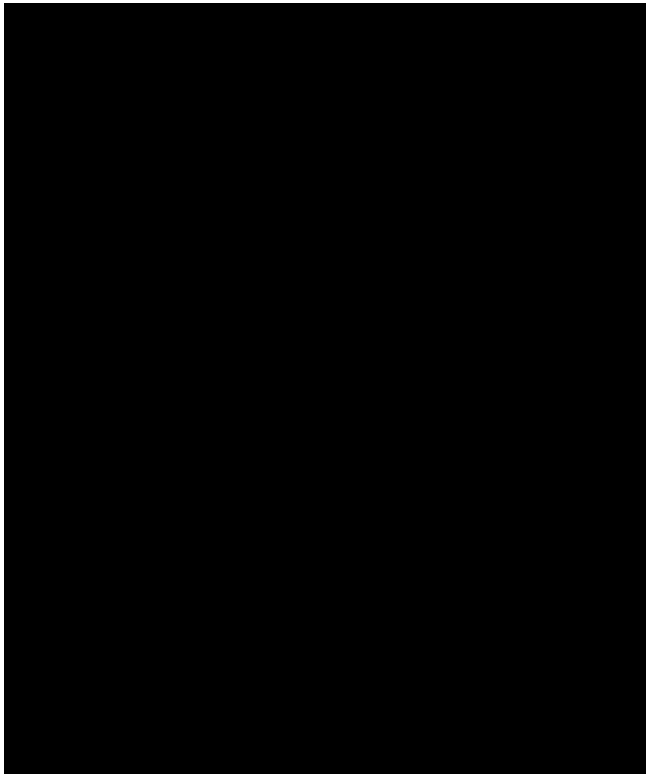


Fig.3 Forward Characteristics of FWD

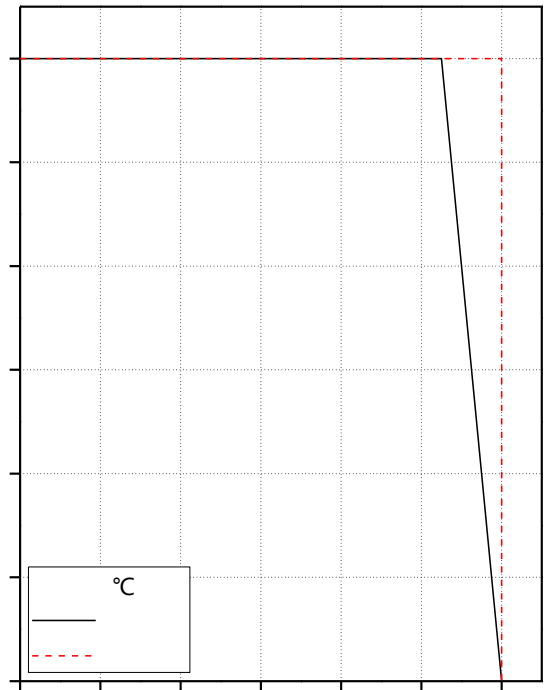


Fig.4 Reverse Bias Safe Operation Area (RBSOA)

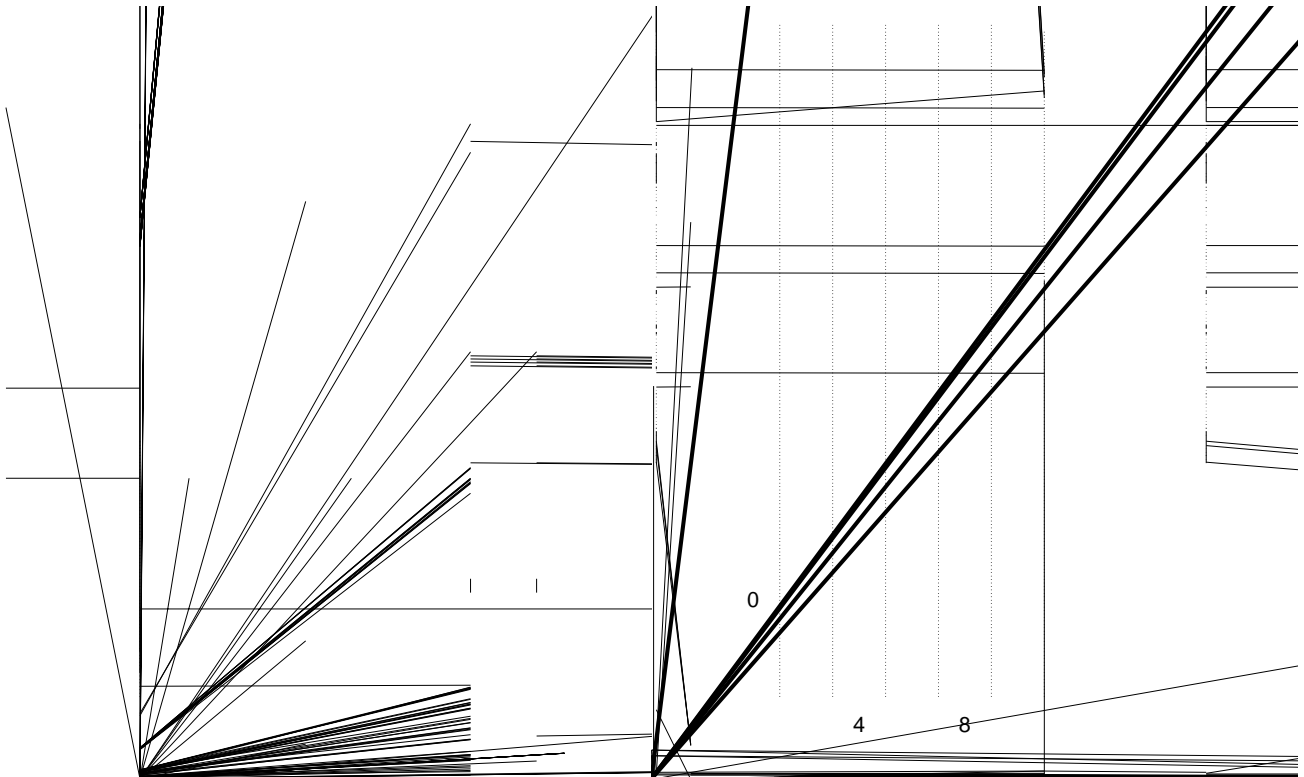


Fig.5 Typical Switching Loss vs. Collector Current

Fig.6 Typical Switching Loss vs. Gate Resistance

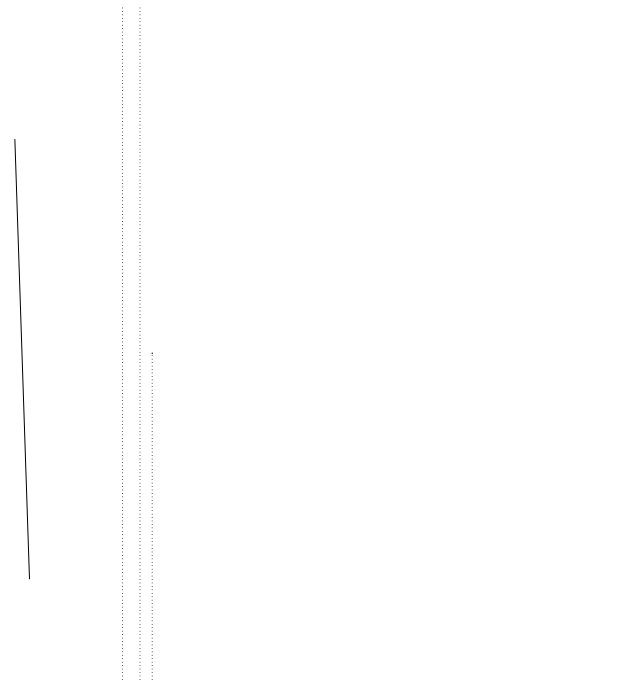


Fig.7 Transient Thermal Impedance (IGBT)

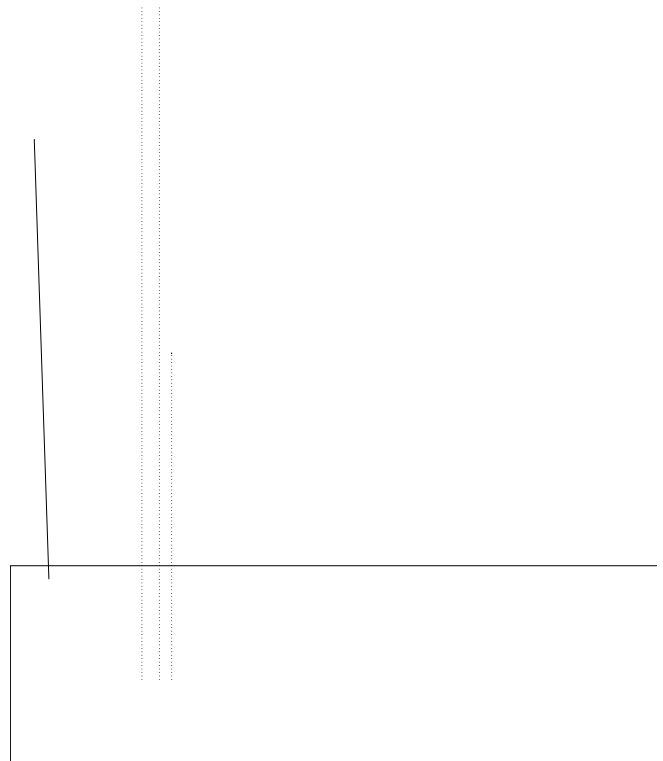


Fig.8 Transient Thermal Impedance (Diode)

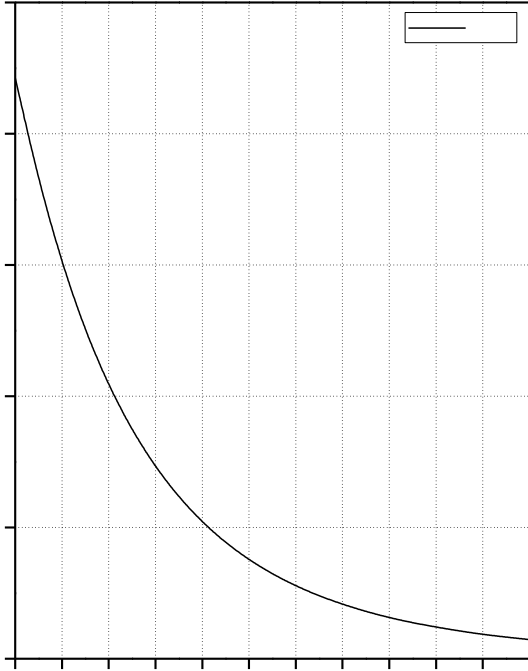


Fig.9 NTC Temperature Characteristics

YG600R120EW1

IGBT Module