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SiC Power BJT Double 1200 Volt 20 Amp Hermetic
MYXB21200-20GAB

Product Overview

Features

- Two devices in one hermetic package.
- High voltage 1200V isolation in a small package outline
- High current 20A
- High temperature 210°C
- RoHS compliant
- HMP solder tinned leads available
- Electrically isolated flange / case
- Silicon Carbide (SiC) device, gives a superior high temperature performance
- Fast temperature independent switching
- Screening options available
  - Commercial high temperature
  - In accordance with MIL-PRF-19500
  - Other options available on request
- Excellent capability to withstand short circuit

Benefits

- High speed switching with low capacitance
- High blocking voltage with low $R_{(on)}$
- Reduction of heat sink requirements

Applications

- Harsh environment motor drive
- Harsh environment inverter
- Induction heater
- DC-DC converters
- Aerospace power electronics

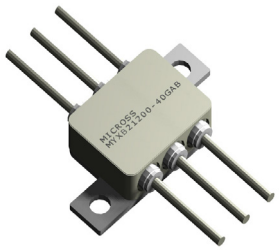


Figure 1: TO-259 (6 PIN)

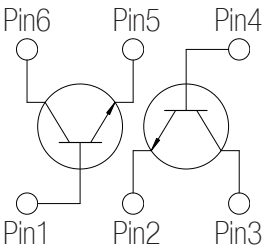


Figure 2: Circuit Diagram

Preliminary

Absolute Maximum Ratings* (Per single device)

Symbols	Parameters	Values	Units
V_{CEO}	Drain Source Voltage	1200	V
V_{EC}	Emitter-Collector Voltage	30	
V_{CBO}	Collector-Base Voltage	1200	
V_{EC}	Emitter-Base Voltage	30	
I_C	Constant Collector Current	20	A
I_{CM}	Pulsed Collector Current (t_p < 10ms)	40	
I_B	Constant Base Current (DC)	3	
I_{BM}	Pulsed Base Current (t_p < 10ms)	6	
T_{stg}	Storage Temperature	-55 to 210	°C
T_J	Operating Junction Temperature	210	
P_{TOT}	Total Power Dissipation	154	W

Thermal Properties

Symbols	Parameters	Values	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.2	°C / Watt

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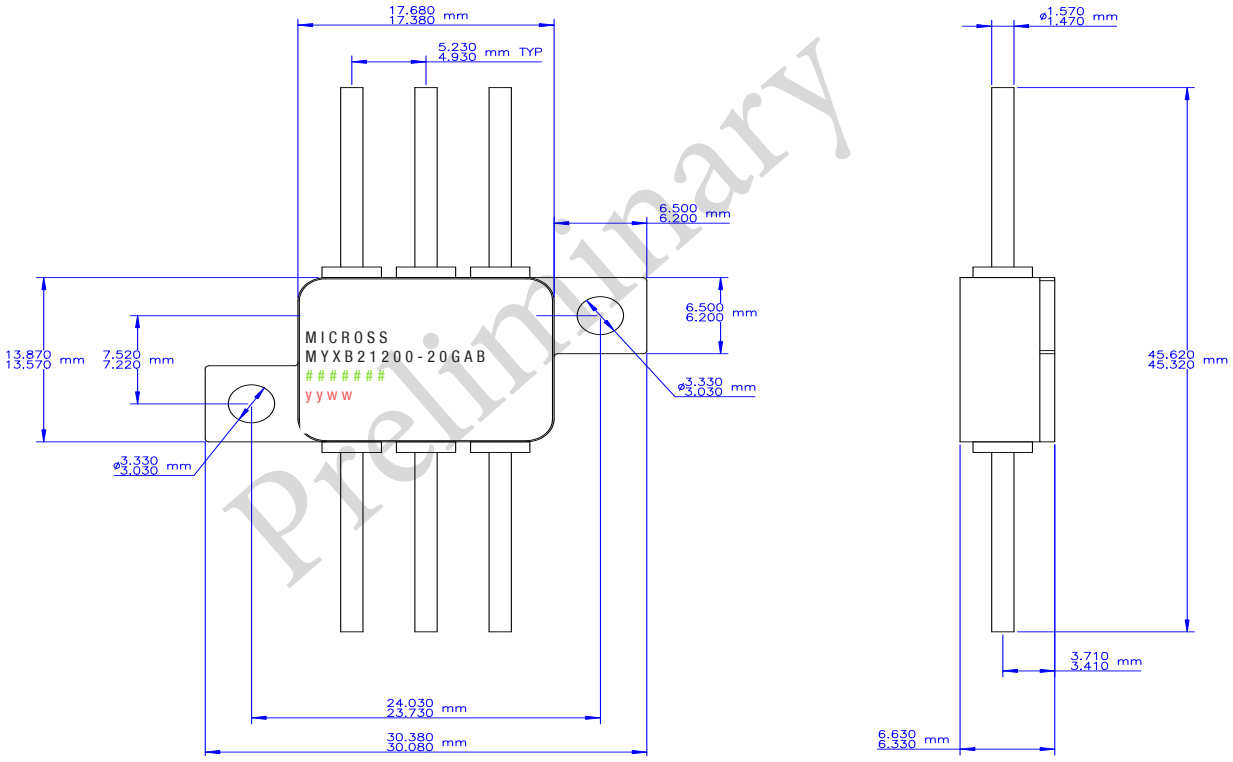
Electrical Characteristics (Per single device)

Symbols	Parameters	Test Conditions	Min	Typ	Max	Units
I_{CEO}	Collector cut off current	T_J = 25°C, V_{CE} = 600 V		TBD		nA
		T_J = 25°C, V_{CE} = 1200 V		TBD		
		T_J = 210°C, V_{CE} = 600 V		TBD		
		T_J = 210°C, V_{CE} = 1200 V		TBD		
h_{FE}	DC Current gain	Pulse Duration = 300µs, V_{CE} = 2.5 V, 25°C, I_C = 3A		20		
		Pulse Duration = 300µs, V_{CE} = 2.5 V, 25°C, I_C = 20A		50		
		Pulse Duration = 300µs, V_{CE} = 2.5 V, 150°C, I_C = 3A		15		
		Pulse Duration = 300µs, V_{CE} = 2.5 V, 150°C, I_C = 20A		35		
		Pulse Duration = 300µs, V_{CE} = 2.5 V, 210°C, I_C = 3A		TBD		
		Pulse Duration = 300µs, V_{CE} = 2.5 V, 210°C, I_C = 20A		TBD		
$V_{CE(SAT)}$	Collector-Emitter saturation voltage	Pulse Duration = 300µs, I_C = 20 A, I_B = 2 A, T_J = 25°C		0.5		V
		Pulse Duration = 300µs, I_C = 20 A, I_B = 2 A, T_J = 150°C		0.75		
		Pulse Duration = 300µs, I_C = 20 A, I_B = 2 A, T_J = 210°C		1.0		

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Dynamic Characteristics (Per single device)

Symbols	Parameters	Test Conditions	Min	Typ	Max	Units
C_{BC}	Base-Collector capacitance	V_{CB} = 0 V, T_J = 25°C, f = 100kHz		2500		pF
		V_{CB} = 40 V, T_J = 25°C, f = 100kHz		650		
C_{BE}	Base-Emitter capacitance	V_{BE} = 0 V, T_J = 25°C, f = 100kHz		6		nF
		V_{BE} = 3.2 V, T_J = 25°C, f = 100kHz		16		
Q_{BC}	Base-Collector charge	V_{CB} = 800 V, T_J = 25°C, f = 100kHz		35		nC
Q_{BE}	Base-Emitter charge	V_{BE} = 3.2 V, T_J = 25°C, f = 100kHz		0.5		nC



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GA = TO-259 Package Type
####### = Batch code
yyww = Date code

yy = year
ww = week

(Font and text colour is not representative of actual parts produced)

Figure 3: Package Dimensions & Part Marking

* Absolute Maximum Ratings Disclaimer

Stresses greater than the values listed under the Absolute Maximum Ratings table may cause permanent damage to the device. These values are stress ratings, functional operation of the device at these or conditions greater than those listed is not implied herein. Exposure to absolute maximum conditions for any duration may affect device reliability and operational life.

Preliminary

Document Title

Silicon Carbide Power BJT Double1200 Volt 20 Amp Hermetic MYXB21200-20GAB

Revision History

Revision #	History	Release Date	Status
1.0	Initial release	March 2014	Preliminary