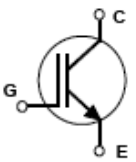
iQXPRZ Power Inc.

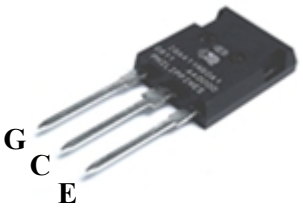
IQAB75N120A2

PRELIMINARY DATASHEET

1200V 75A IGBT in Ext TO247 Package

- Ultra low loss IGBT
- Highly rugged SPT design
- Designed for
  - Motor controls
  - General inverters
  - Uninterrupted power supplies (UPS)
- Pb-free lead finish; RoHS compliant





MAXIMUM RATINGS

Parameter	Symbol	Value	Units
Collector-emitter voltage	V_{CE}	1200	V
DC collector current	I_C	75	A
Pulsed collector current	I_{CM}	150	
Gate-emitter voltage	V_{GE}	± 20	V
IBGT short circuit SOA V_{CC} =900V , V_{GE} = 15V, V_{CEM} ≤1200V, T_{VJ} =125°C	t_{SC}	10	µs
Soldering temperature Wave soldering, 1.6 mm (0.063 in.) from case for 10s	T_S	300	°C
Operating junction and storage temperature	T_{vj}	-40… +150	°C

ELECTRICAL CHARACTERISTICS, at T_j = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Characteristics						
Collector-emitter breakdown voltage	$V_{(BR)CES}$	V_{GE} = 0V, I_C = 1mA	1200	-	-	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	V_{GE} = 15V, I_C = 75A T = 25°C T = 125°C	- -	1.8 2.0	- -	
Gate-emitter threshold voltage	$V_{GE(th)}$	I_C = 3 mA, V_{CE} = V_{GE}	5	6.2	7	
Zero gate voltage collector current	I_{CES}	V_{CE} = 1200V, V_{GE} = 0 T = 25°C T = 125°C	- -	- 85	100 -	mA
Gate-emitter leakage current	I_{GES}	V_{CE} = 0V, V_{GE} = 20V, T= 125°C	-200	-	200	nA
Transconductance	R_{Gint}		-	3	-	Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{CE} = 25V, V_{GE} = 0V, f = 1MHz	-	5.52	-	nF
Output capacitance	C_{oss}		-	0.40	-	
Reverse transfer capacitance	C_{rss}		-	0.26	-	

CAUTION: These devices are ESD sensitive. Use proper handling procedure.

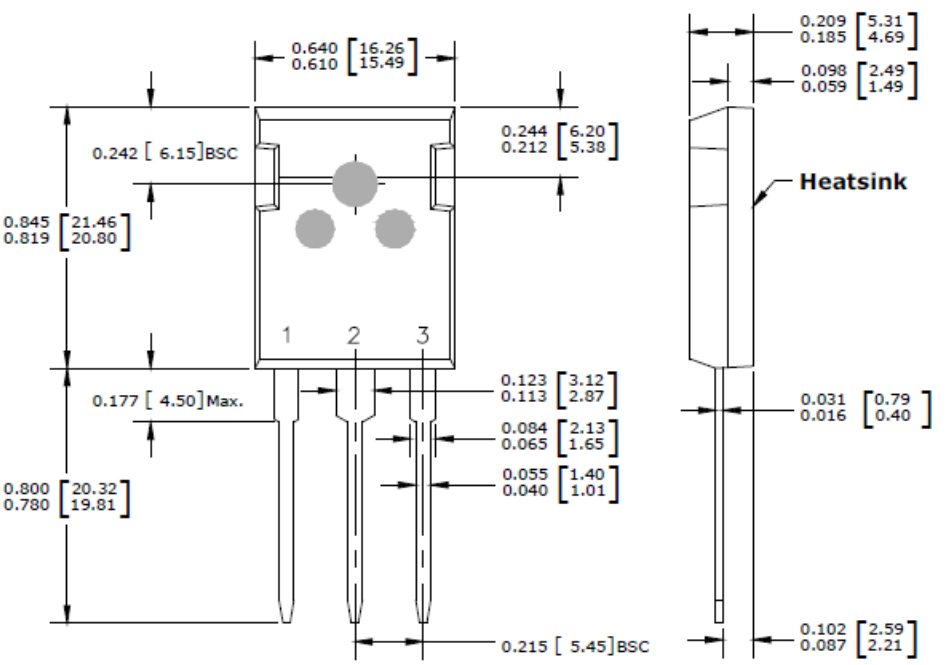
Team Pacific Building, Electronics Avenue
FTI Complex, Special Economic Zone
Taguig City, Philippines

Website: www.iqxprzpower.com
Telefax +632 837 1538

SWITCHING CHARACTERISTICS, Inductive Load at T_j = 25°C

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
IGBT Characteristics						
Turn-on delay time T= 25°C T= 125°C	$t_{d(on)}$	V_{CC}=600V, I_C=75A, V_{GE}=±15V, R_G=15Ω, L_σ = 60nH, Inductive load.	- -	165 175	- -	ns
Rise time T= 25°C T= 125°C	t_r		- -	75 70	- -	
Turn-off delay time T= 25°C T= 125°C	$t_{d(off)}$		- -	435 500	- -	
Fall time T= 25°C T= 125°C	t_f		- -	50 70	- -	
Turn-on energy T= 25°C T= 125°C	E_{on}		- -	9.3 12.4	- -	mJ
Turn-off energy T= 25°C T= 125°C	E_{off}		- -	4.5 7.5	- -	
Short circuit current	I_{SC}	T_C=125°C , V_{CC}=900V, V_{GE}=15V, t_{psc}≤10μs, V_{CEM}=≤1200V	-	350	-	A
Gate charge	Q_g	V_{CE}=600V, I_C=75A, V_{GE}=-15V,15V	-	780	-	nC

Package Outline Drawing



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