5 é / Descriptions

TO-247 .> / / x Í Û õ E â ³ } ’ož

Insulated-Gate Bipolar Transistor in a TO-247 Plastic Package.

¤ ª / Features

650V k 75A

$V_{CE(SAT)}$= 1.90V(typ.) @V_{GE}=15V,I_C= 75A

Ð ÷ / Applications

ß † ô E ˜o• • • ›o•D N ô E ˜o• ä 8 • ¼ È ä ô E ˜ož

Solar Converters, Uninterrupted Power Supply, Welding Converters, Mid to High Range Switching Frequency Converters.

Ã W] Ô · / Equivalent Circuit

• Û - æ / Pinning

PIN1 y G PIN 2o•EPAD y C PIN 3 y E

, M V / Marking

• - ~ ª ¢ož

See Marking Instructions.

@ ƒ Parameter		… Z Symbol	ƒ › Rating	% y Unit
Collector-Emitter Voltage		V_{CES}	650	V
Gate-Emitter Voltage		V_{GES}	f 30	V
Continuous Collector Current	T_C=25	I_C	150	A
	T_C=100		75	A
Pulsed Collector Current , Limited by T_{Jmax}		I_{CM}	300	A
Continuous Diode Forward Current	T_C=25	I_F	160	A
	T_C=100		80	A
Power Dissipation	T_C=25	P_D	750	W
	T_C=100		375	W
Operating Junction Temperature Range		T_J	-40 to +175	
Storage Temperature Range		T_{STG}	-55 to +150	
Maximum Junction-to-Ambient		R_{JA}	80	/W
Maximum IGBT Junction-to-Case		R_{JC}	0.24	/W
Maximum Diode Junction-to-Case		R_{JC}	0.48	/W

@ ƒ Parameter	… Z Symbol	y ¡ Ú ^ Test Conditions		Â 4 › Min	Á º › Typ	Â Ý › Max	% y Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	I_C=250uA, V_{GE}=0V		650			V
Zero Gate Voltage Collector current	I_{CES}	V_{CE}=650V, V_{GE}=0V				250	uA
Gate-Emitter Leakage Current	I_{GES}	V_{CE}=0V, V_{GE}= ±30V				f 100	nA
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	V_{CE}=V_{GE}, I_C=250 A		4.0	5.0	5.5	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=75A	T_J=25		1.90	2.20	V
			T_J=125		2.00		

Total Gate Charge Q_g CEw (CES)T 10.4958 0 0 10.5 351.24 72217 250Tm -.0002 Tc (=1onV01

@ *f* Parameter	… Z Symbol	y ¡ Ú ^ Test Conditions		Â 4 › Min	Á º › Typ	Â Ý › Max	% y Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GE}=15V, V_{CC}=400V I_C=75A, R_G=10 Inductive Load	TC=25		38		ns
			Tc=150		36		ns
Turn-On Rise Time	t_r		TC=25		118		ns
			Tc=150		100		ns
Turn-Off Delay Time	$t_{d(off)}$		TC=25		267		ns
			Tc=150		300		ns
Turn-Off Fall Time	t_f		TC=25		81		ns
			Tc=150		85		ns
Turn-On Energy	E_{on}		TC=25		4.65		mJ
			Tc=150		4.50		mJ
Turn-Off Energy	E_{off}		TC=25		2.45		mJ
			Tc=150		2.70		mJ
Total Switching Energy	E_{ts}		TC=25		7.10		mJ
			Tc=150		7.20		mJ
Input Capacitance	C_{ies}	V_{GE}=0V, f=1MHz	V_{CE}=25V		2850		pF

Ô ? d • Ž ¢ / Electrical Characteristic Curve

Ô ? d • Ž ¢ / Electrical Characteristic Curve

Ô ? d • Ž ¢ / Electrical Characteristic Curve

Ô ? d • Ž ¢ / Electrical Characteristic Curve

Ô ? d • Ž ¢ / Electrical Characteristic Curve

Ø ¤ =) ¢ / Package Dimensions

, M y ƒ / Marking Instructions

BR

GB75P65AHA

****

ª ¢ y

BR y ¸ [W A

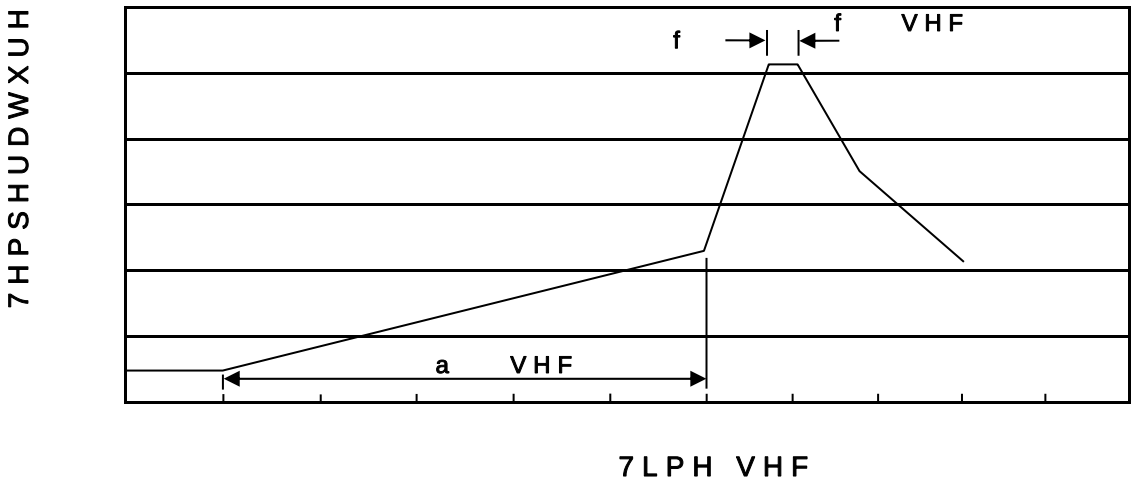
- (6 ' . ' y º Z W A

y ÿ D Z W A k š ÿ D Z J

Note:

BR:	Company Code
GB75P65AHA:	Product Type Code
****:	Lot No. Code, code change with Lot No.

G PD t … • Ž ¢ (x /) / Temperature Profile for Dip Soldering(Pb-Free)



ª ¢ y

1o• Ä ½ “ † 25 ½150 - k ž • 60 ½90sec;

2o• Q › “ † 255 r5 - k ž • 4 Ò 5 r0.5sec;

3o•D N ò i Ò 0 , † 2 ½10 - /sec.

Note:

1.Preheating:25~150 - , Time:60~90sec.

2.Peak Temp.:255 r5 - , Duration:5 r0.5sec.

3. Cooling Speed: 2~10 - /sec.

ÂD /Cã p ¯ »] / Resistance to Soldering Heat Test Conditions

“ † y 270 r5 - ž • y 10 r1 sec. Temp.:270±5 Time:10±1 sec

G P á / Packaging SPEC.

ì ’ x / TUBE

Package Type 7>û ˜ E	Units ;>û ¦H					Dimension ;>û p . (unit Æmm³)		
	Units/Tube / •1×	Tubes/Inner Box •1× /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Tube•1×	Inner Box×	Outer Box1ç
TO-247	30	15	450	5	2250	520×44×6	580×158×55	595×300×178

„ Ð y ƒ / Notices

Î † U ˆ ñ Ä ’ Î ® I c ¯ ² Á Ò ¢ ³ Øož

All information provided in this document is subject to legal disclaimers.