

BU208A BU508A/BU508AFI

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTORS

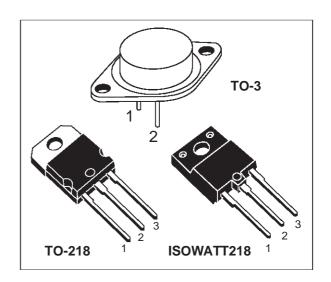
- STMicroelectronics PREFERRED SALESTYPES
- HIGH VOLTAGE CAPABILITY
- U.L. RECOGNISED ISOWATT218 PACKAGE (U.L. FILE # E81734 (N)
- JEDEC TO-3 METAL CASE.

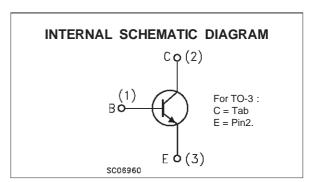
APPLICATIONS:

 HORIZONTAL DEFLECTION FOR COLOUR TV

DESCRIPTION

The BU208A, BU508A and BU508AFI are manufactured using Multiepitaxial Mesa technology for cost-effective high performance and use a Hollow Emitter structure to enhance switching speeds.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
V _{CES}	Collector-Emitter Voltage (V _{BE} = 0)		1500		
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		700		V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	10			V
Ic	Collector Current	8			Α
I _{CM}	Collector Peak Current (tp < 5 ms)	15			Α
		TO - 3	TO - 218	ISOWATT218	
P _{tot}	Total Dissipation at T _c = 25 °C	150	125	50	W
T _{stg}	Storage Temperature	-65 to 175	-65 to 150	-65 to 150	°C
Tj	Max. Operating Junction Temperature	175	150	150	°C

November 1999 1/8

BU208A / BU508A / BU508AFI

THERMAL DATA

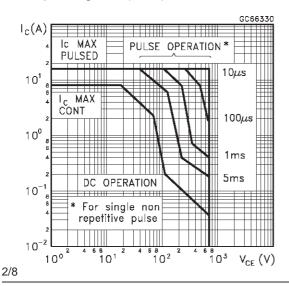
			TO-3	TO-218	ISOWATT218	
R _{thj-case}	Thermal Resistance Junction-case	Max	1	1	2.5	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

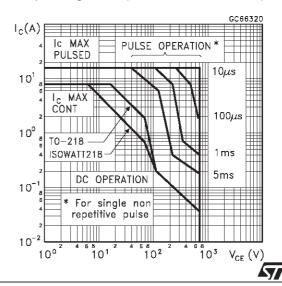
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 1500 V			1 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			100	μА
V _{CEO(sus)} *	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA	700			V
V _{EBO}	Emitter Base Voltage (I _C = 0)	I _E = 10 mA	10			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	$I_C = 4.5 \text{ A}$ $I_B = 2 \text{ A}$			1	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 4.5 A I _B = 2 A			1.3	V
t _s	INDUCTIVE LOAD Storage Time Fall Time	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		7 0.55		μs μs
f⊤	Transition Frequency	Ic = 0.1 A VcE = 5 V f = 5 MHz		7		MHz

^{*} Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

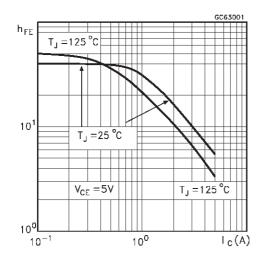
Safe Operating Area (TO-3)



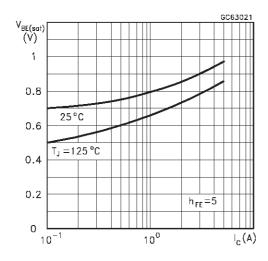
Safe Operating Areas (TO-218/ISOWATT218)



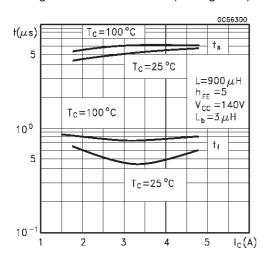
DC Current Gain



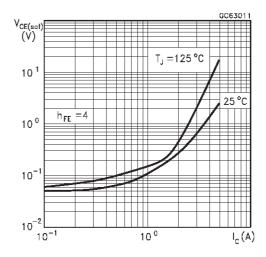
Base Emitter Saturation Voltage



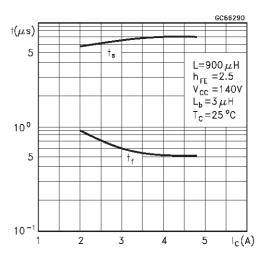
Switching Time Inductive Load (see figure 1)



Collector Emitter Saturation Voltage

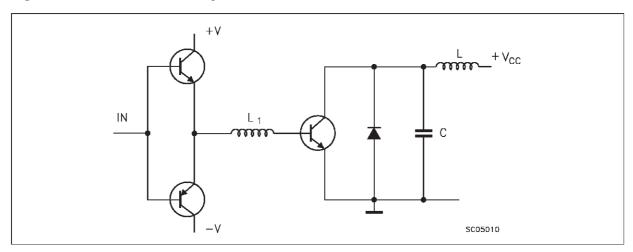


Switching Time Inductive Load



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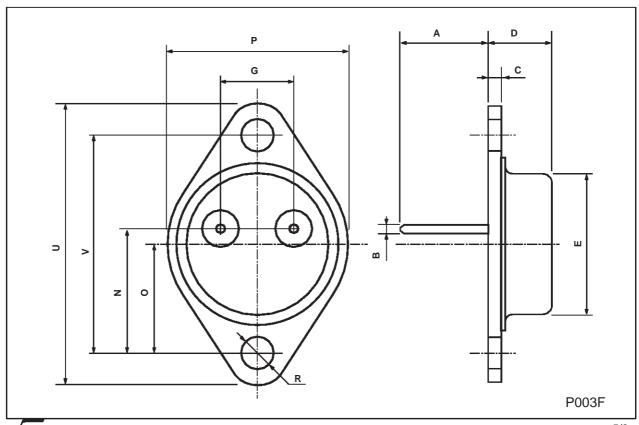
Figure 1: Inductive Load Switching Test Circuit.



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TO-3 MECHANICAL DATA

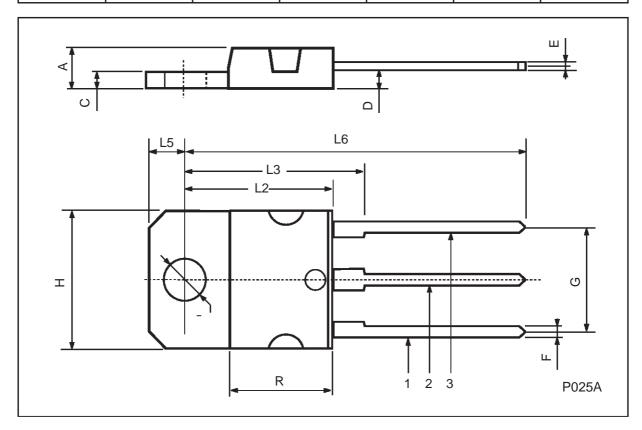
DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	11.00		13.10	0.433		0.516	
В	0.97		1.15	0.038		0.045	
С	1.50		1.65	0.059		0.065	
D	8.32		8.92	0.327		0.351	
E	19.00		20.00	0.748		0.787	
G	10.70		11.10	0.421		0.437	
N	16.50		17.20	0.649		0.677	
Р	25.00		26.00	0.984		1.023	
R	4.00		4.09	0.157		0.161	
U	38.50		39.30	1.515		1.547	
V	30.00		30.30	1.187		1.193	



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TO-218 (SOT-93) MECHANICAL DATA

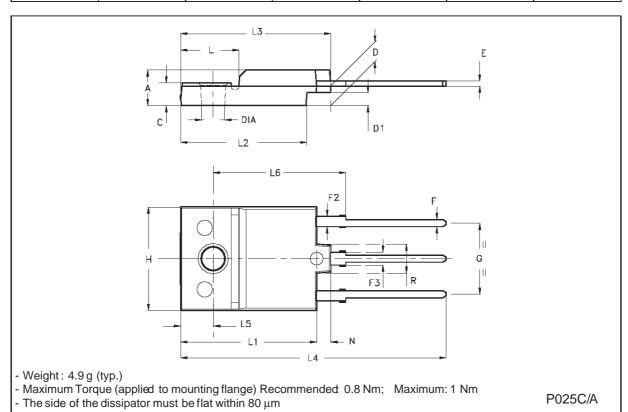
DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Α	4.7		4.9	0.185		0.193	
С	1.17		1.37	0.046		0.054	
D		2.5			0.098		
E	0.5		0.78	0.019		0.030	
F	1.1		1.3	0.043		0.051	
G	10.8		11.1	0.425		0.437	
Н	14.7		15.2	0.578		0.598	
L2	_		16.2	_		0.637	
L3		18			0.708		
L5	3.95		4.15	0.155		0.163	
L6		31			1.220		
R	_		12.2	_		0.480	
Ø	4		4.1	0.157		0.161	



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ISOWATT218 MECHANICAL DATA

DIM.		mm			inch			
DIIVI.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Α	5.35		5.65	0.211		0.222		
С	3.30		3.80	0.130		0.150		
D	2.90		3.10	0.114		0.122		
D1	1.88		2.08	0.074		0.082		
Е	0.75		0.95	0.030		0.037		
F	1.05		1.25	0.041		0.049		
F2	1.50		1.70	0.059		0.067		
F3	1.90		2.10	0.075		0.083		
G	10.80		11.20	0.425		0.441		
Н	15.80		16.20	0.622		0.638		
L		9			0.354			
L1	20.80		21.20	0.819		0.835		
L2	19.10		19.90	0.752		0.783		
L3	22.80		23.60	0.898		0.929		
L4	40.50		42.50	1.594		1.673		
L5	4.85		5.25	0.191		0.207		
L6	20.25		20.75	0.797		0.817		
N	2.1		2.3	0.083		0.091		
R		4.6			0.181			
DIA	3.5		3.7	0.138		0.146		



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