

BU941 / BU941P / BUB941PFI

THERMAL DATA

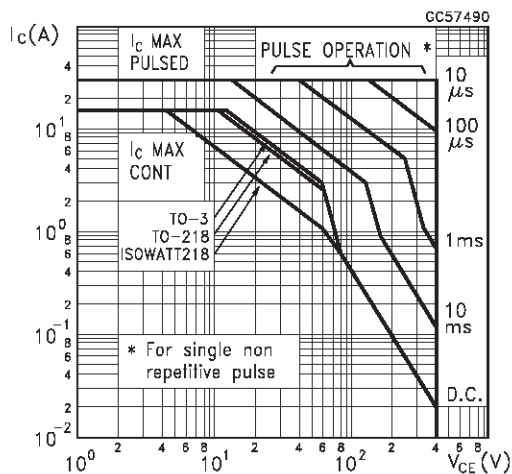
		TO-3	TO-218	ISOWATT218	
R _{thj-case}	Thermal Resistance Junction-case Max	0.97	0.97	2.3	°C/W

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

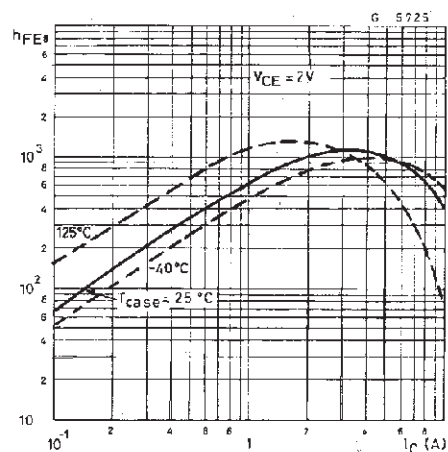
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEs}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 500 V V _{CE} = 500 V T _j = 125 °C			100 0.5	μA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 450 V V _{CE} = 450 V T _j = 125 °C			100 0.5	μA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			20	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA L = 10 mH V _{Clamp} = 400 V (See FIG.4)	400			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 8 A I _B = 100 mA I _C = 10 A I _B = 250 mA I _C = 12 A I _B = 300 mA			1.6 1.8 2	V V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 8 A I _B = 100 mA I _C = 10 A I _B = 250 mA I _C = 12 A I _B = 300 mA			2.2 2.5 2.7	V V V
h _{FE*}	DC Current Gain	I _C = 5 A V _{CE} = 10 V	300			
V _F	Diode Forward Voltage	I _F = 10 A			2.5	V
	Functional Test (see fig. 1)	V _{CC} = 24 V V _{Clamp} = 400 V L = 7 mH	10			A
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time (see fig. 3)	V _{CC} = 12 V V _{BE} = 0 L = 7 mH I _B = 70 mA V _{Clamp} = 300 V R _{BE} = 47 Ω I _C = 7 A		15 0.5		μs μs

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

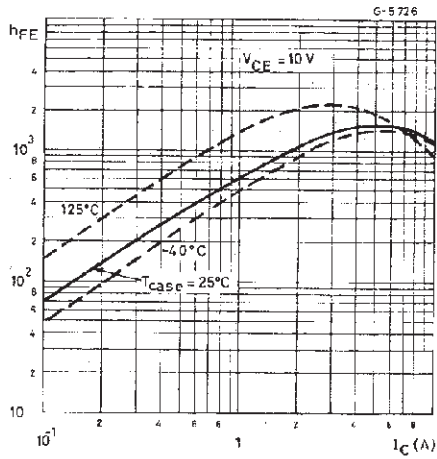
Safe Operating Area



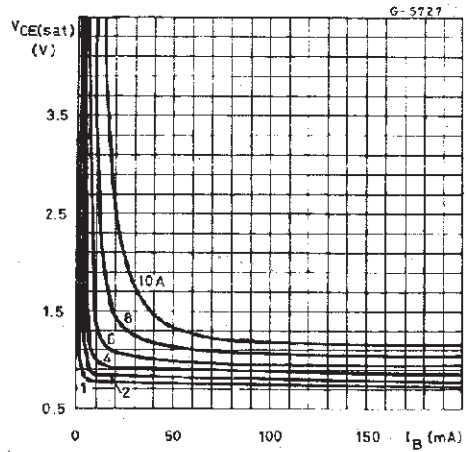
DC Current Gain



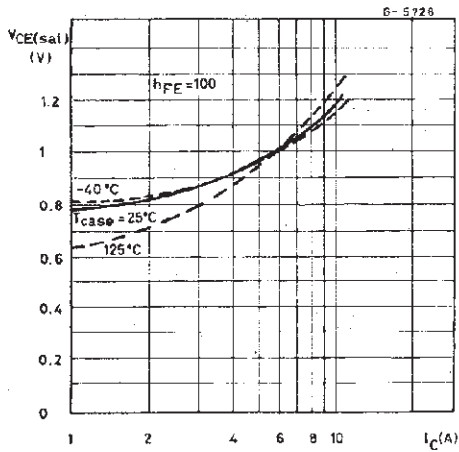
DC Current Gain



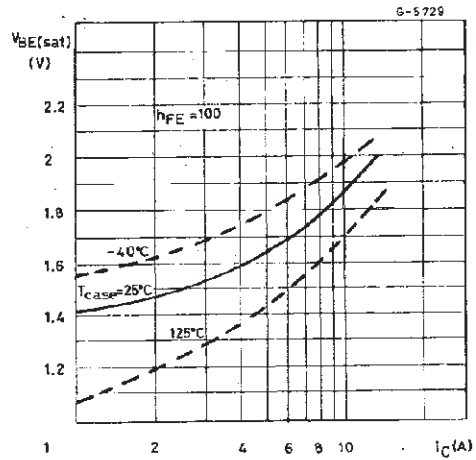
Collector-emitter Saturation Voltage



Collector-emitter Saturation Voltage



Base-emitter Saturation Voltage



Switching Time Inductive Load (see fig.3)

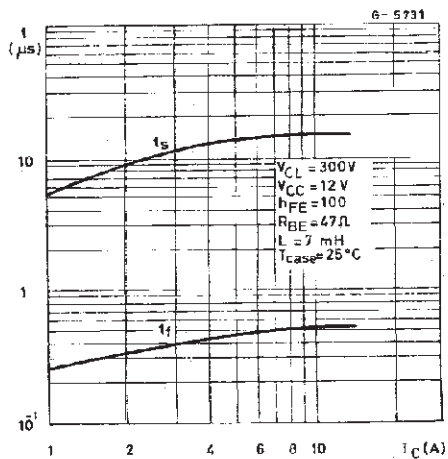


FIGURE 1: Functional Test Circuit

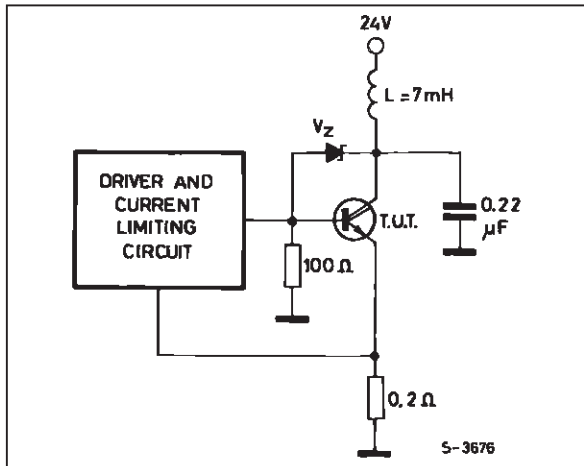


FIGURE 2: Functional Test Waveforms

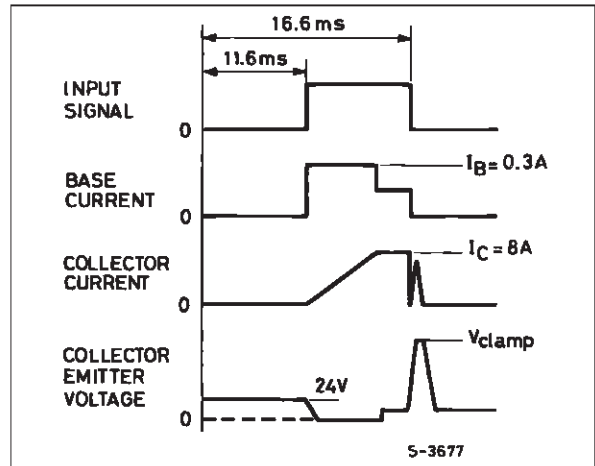


FIGURE 3: Switching Time Test Circuit

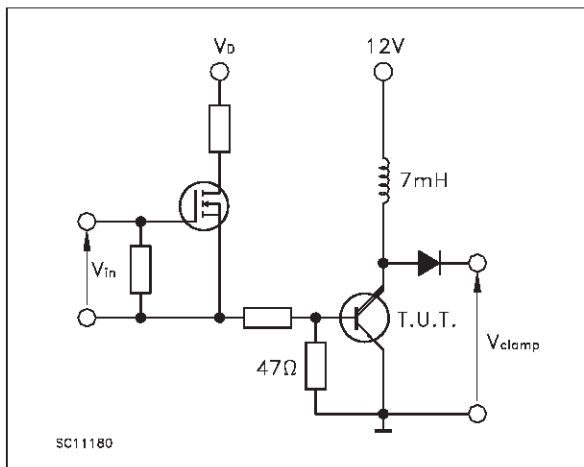
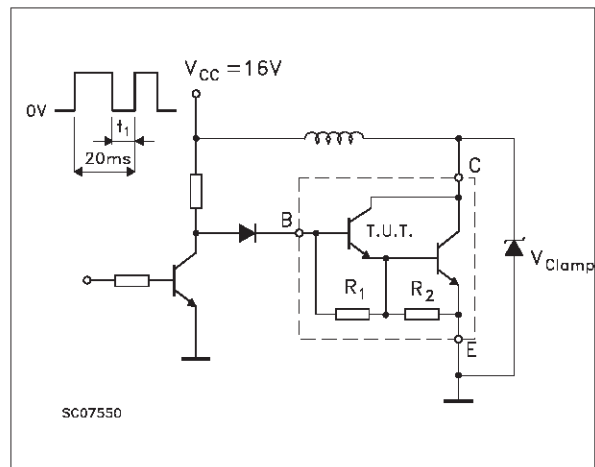
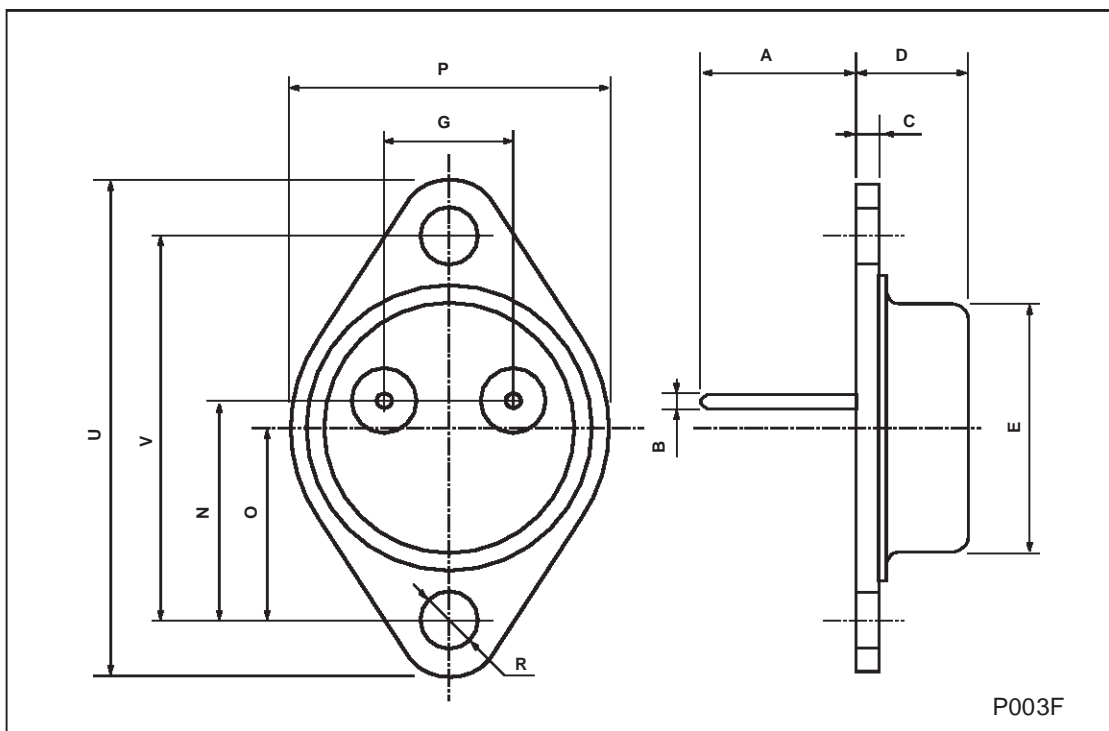


FIGURE 4: Sustaining Voltage Test Circuit



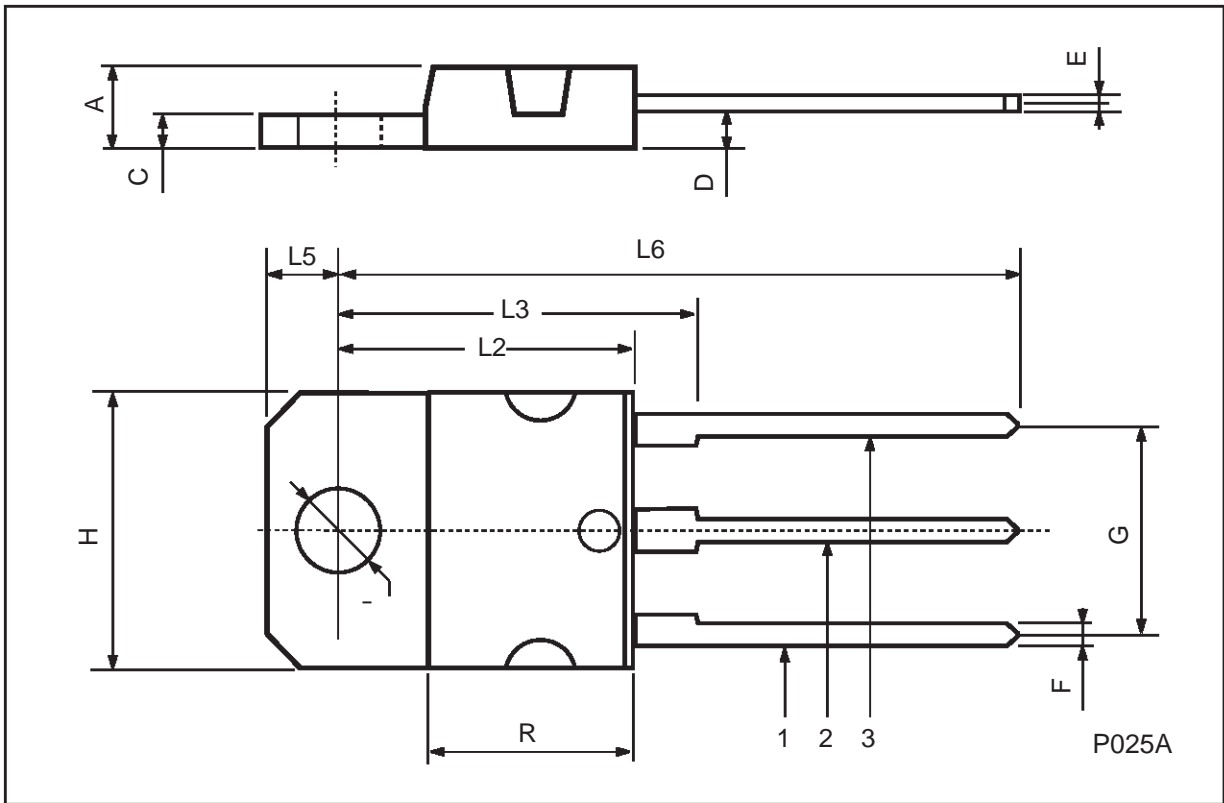
TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	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
P	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



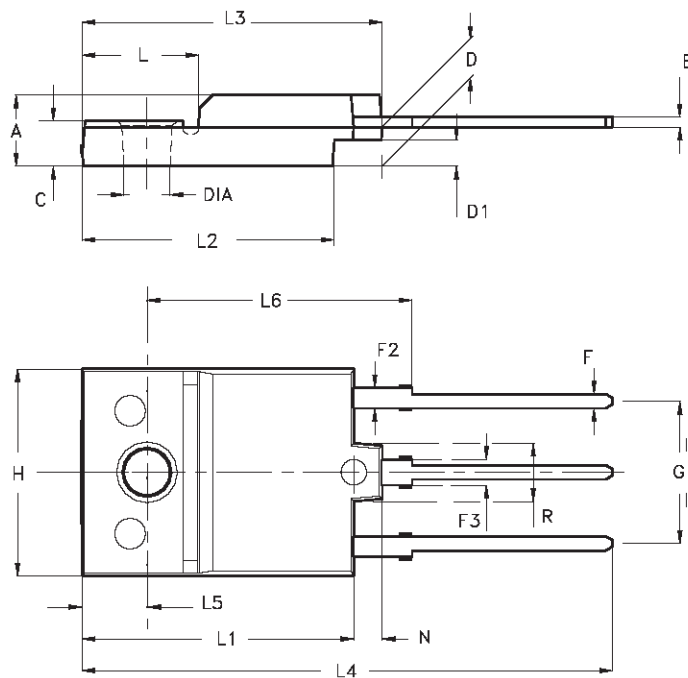
TO-218 (SOT-93) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		4.9	0.185		0.193
C	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
H	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



ISOWATT218 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	5.35		5.65	0.211		0.222
C	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
E	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
H	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



- Weight : 4.9 g (typ.)
- Maximum Torque (applied to mounting flange) Recommended 0.8 Nm; Maximum: 1 Nm
- The side of the dissipator must be flat within 80 µm

P025C/A

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 1999 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia - Malta - Morocco -
Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

<http://www.st.com>