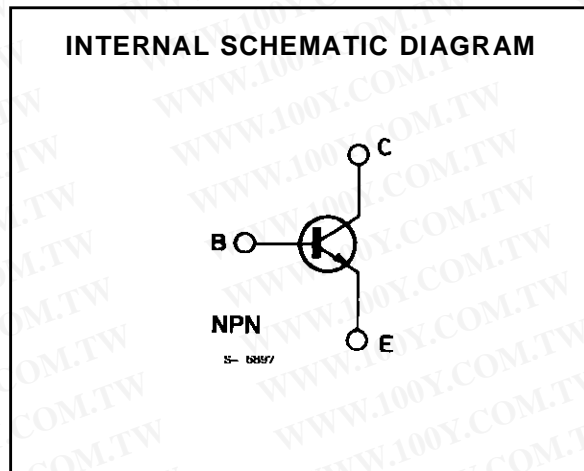
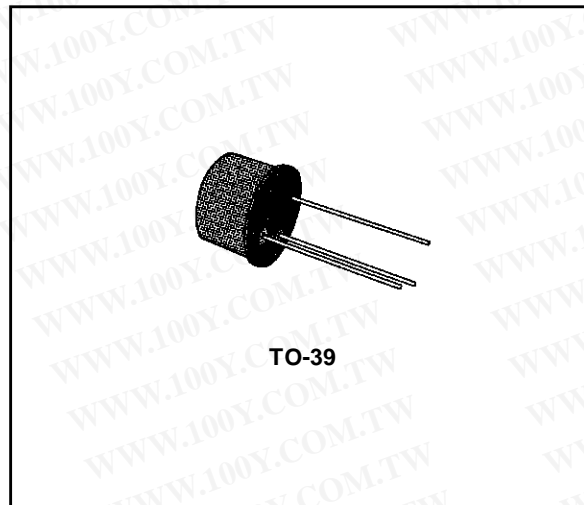


HIGH VOLTAGE, HIGH CURRENT SWITCH

DESCRIPTION

The 2N3725 is a silicon planar epitaxial transistor in TO-39 metal case. It is a high-voltage, high current switch used for memory applications requiring breakdown voltages up to 50 V and operating currents to 1 A. Fast switching times are assured because of the high minimum f_T (300 MHz) and tight control on storage time.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	80	V
V_{CES}	Collector-emitter Voltage ($V_{BE} = 0$)	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	50	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	1	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_{case} \leq 25^\circ\text{C}$	0.8	W
		3.5	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

2N3725

THERMAL DATA

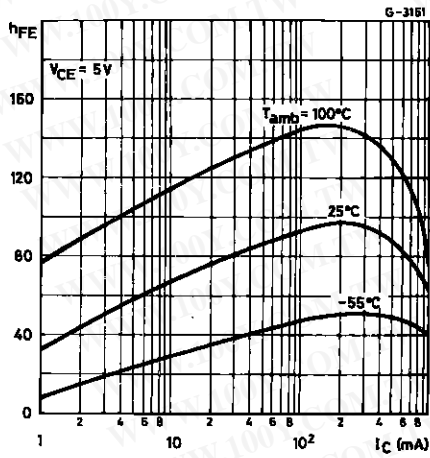
R _{th j-case}	Thermal Resistance Junction-case	Max	50	°C/W
R _{th j-amb}	Thermal Resistance Junction-ambient	Max	220	°C/W

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

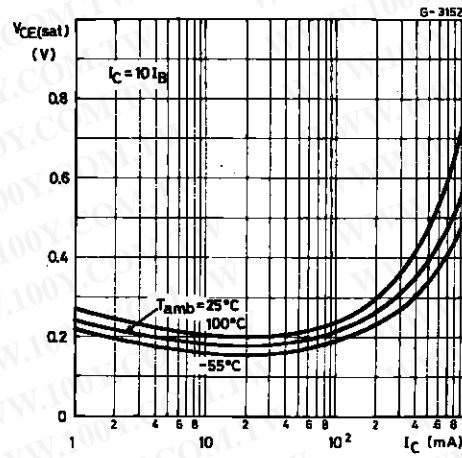
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cutoff Current (I _E = 0)	V _{CB} = 60 V V _{CB} = 60 V T _{amb} = 100 °C			1.7 120	μA μA
V _{(BR)CBO}	Collector-base Breakdown Voltage (I _E = 0)	I _C = 10 μA	80			V
V _{(BR)CES}	Collector-emitter Breakdown Voltage (V _{BE} = 0)	I _C = 10 μA	80			V
V _{(BR)CEO} *	Collector-emitter Breakdown Voltage (I _B = 0)	I _C = 10 mA	50			V
V _{(BR)EBO}	Emitter-base Breakdown Voltage (I _C = 0)	I _E = 10 μA	6			V
V _{CE(sat)} *	Collector-emitter Saturation Voltage	I _C = 10 mA I _B = 1 mA I _C = 100 mA I _B = 10 mA I _C = 300 mA I _B = 30 mA I _C = 500 mA I _B = 50 mA I _C = 800 mA I _B = 80 mA I _C = 1000 mA I _B = 100 mA		0.19 0.21 0.31 0.4 0.5 0.6	0.25 0.26 0.4 0.52 0.8 0.95	V V V V V V
V _{BE(sat)} *	Base-emitter Saturation Voltage	I _C = 10 mA I _B = 1 mA I _C = 100 mA I _B = 10 mA I _C = 300 mA I _B = 30 mA I _C = 500 mA I _B = 50 mA I _C = 800 mA I _B = 80 mA I _C = 1000 mA I _B = 100 mA	0.9	0.64 0.75 0.89 1.0 1.1	0.76 0.86 1.1 1.2 1.5 1.7	V V V V V V
h _{FE} *	DC Current Gain	I _C = 10 mA V _{CE} = 1 V I _C = 100 mA V _{CE} = 1 V I _C = 300 mA V _{CE} = 1 V I _C = 1000 mA V _{CE} = 5 V I _C = 800 mA V _{CE} = 2 V I _C = 500 mA V _{CE} = 1 V	30 60 40 25 20 35	60 90 60 65 40	150	
h _{fe}	High Frequency Current Gain	I _C = 50 mA V _{CE} = 10 V f = 100 MHz	3			
C _{CBO}	Collector-base Capacitance	I _E = 0 V _{CB} = 10 V f = 1 MHz			10	pF
C _{EBO}	Emitter-base Capacitance	I _C = 0 V _{CB} = 0.5 V f = 1 MHz			55	pF
t _{on} **	Turn-on Time	I _C = 500 mA V _{CC} = 30 V I _B = 50 mA			35	ns
t _{off} **	Turn off Time	I _C = 500 mA V _{CC} = 30 V I _{B1} = - I _{B2} = 50 mA			60	ns

* Pulsed : pulse duration = 300 μs, duty cycle = 1 %.
 ** See test circuit.

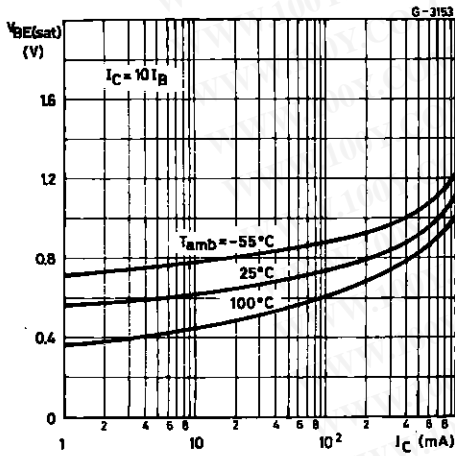
DC Current Gain.



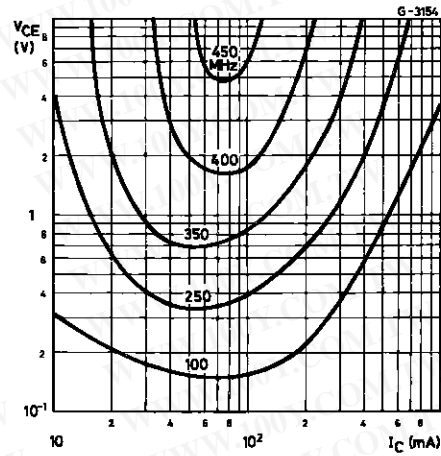
Collector-emitter Saturation Voltage.



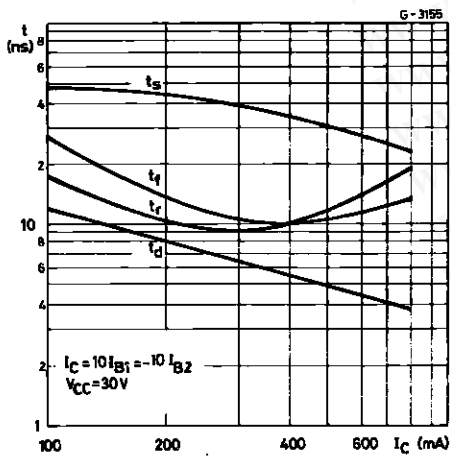
Base-emitter Saturation Voltage.



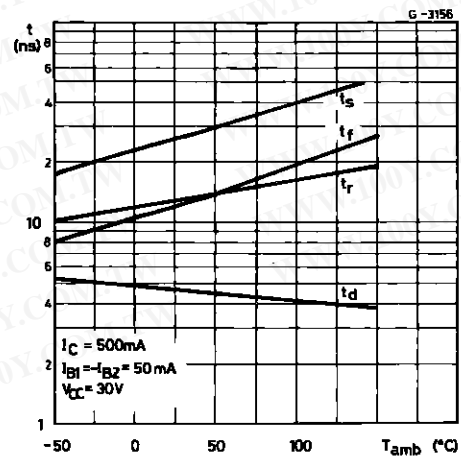
Contours of Constant Transition Frequency.



Switching Characteristics.



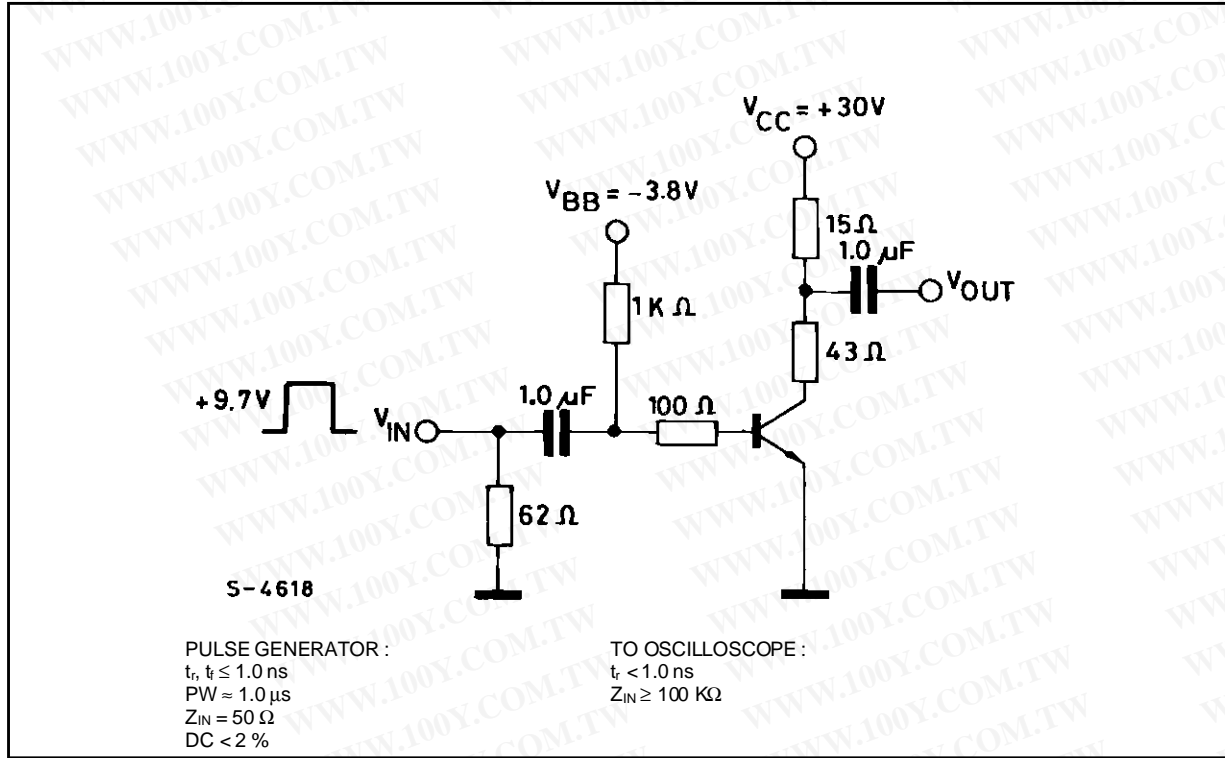
Switching Characteristics.



2N3725

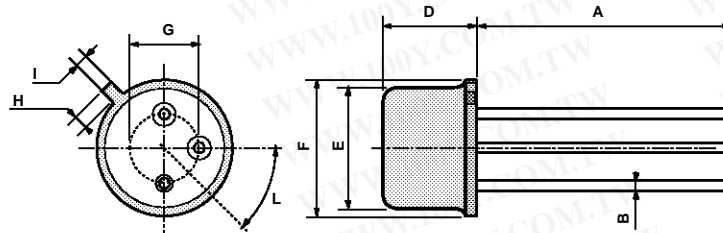
勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Test Circuit for t_{on} , t_{off} .



TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B