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2N3725A

EPITAXIAL PLANAR NPN

HIGH-VOLTAGE, HIGH-CURRENT SWITCH

ABSOLUTE MAXIMUM RATINGS

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 $T_{amb} \leq 25$ °C	0.8	W
	at $T_{case} \leq 25$ °C	3.5	W
T_{stg}, T_j	Storage and junction temperature	-65 to 200	°C

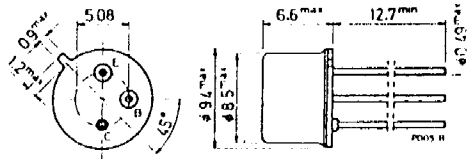
THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	50	°C/W
$R_{th\ j\text{-}amb}$	Thermal resistance junction-ambient	max	220	°C/W

MECHANICAL DATA

Dimensions in mm

Collector connected to case



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

Parameter		Test conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector cutoff current (I_E = 0)	V_{CB} = 60V V_{CB} = 60V	 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_C = 100 mA I_C = 300 mA I_C = 500 mA I_C = 800 mA I_C = 1000mA	I_B = 1 mA I_B = 10 mA I_B = 30 mA I_B = 50 mA I_B = 80 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_C = 100 mA I_C = 300 mA I_C = 500 mA I_C = 800 mA I_C = 1000mA	I_B = 1 mA I_B = 10 mA I_B = 30 mA I_B = 50 mA I_B = 80 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 I_C = 100 mA I_C = 300 mA I_C = 1000mA I_C = 800 mA I_C = 500 mA	V_{CE} = 1 V V_{CE} = 1 V V_{CE} = 1 V V_{CE} = 5 V V_{CE} = 2 V V_{CE} = 1V	30 60 40 25 20 35	60 90 60 65 40 	 150 	– – – – – –
h_{fe}	High frequency current gain	I_C = 50 mA f = 100 MHz	V_{CE} = 10V	3			–
C_{CBO}	Collector-base capacitance	I_E = 0 f = 1 MHz	V_{CB} = 10V			10	pF
C_{EBO}	Emitter-base capacitance	I_C = 0 f = 1 MHz	V_{CB} = 0.5V			55	pF
t_{on}**	Turn-on time	I_C = 500 mA I_B = 50 mA	V_{CC} = 30V			35	ns
t_{off}**	Turn off time	I_C = 500 mA I_{B1} = -I_{B2} = 50 mA	V_{CC} = 30V			60	ns

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