SILICON PLANAR EPITAXIAL TRANSISTORS

NPN silicon planar epitaxial transistors, each in a plastic TO-92 package.
They are intended for use in amplifier applications.

QUICK REFERENCE DATA

			MPS3704	05	06	
Collector-emitter voltage (open base)	V_{CEO}	max.	30	30	20	V
Collector-base voltage (open emitter)	V_{CBO}	max.	50	50	40	V
Collector current (DC)	I_C	max.		600		mA
Total power dissipation at $T_{amb} \leq 25\ ^oC$	P_{tot}	max.		625		mW
Collector-emitter saturation voltage I_C = 100 mA; I_B = 5 mA	V_{CEsat}	max.	0.6	0.8	1.0	V
DC current gain I_C = 50 mA; V_{CE} = 5 V	h_{FE}	min.	100	50	30	
		max.	300	150	600	

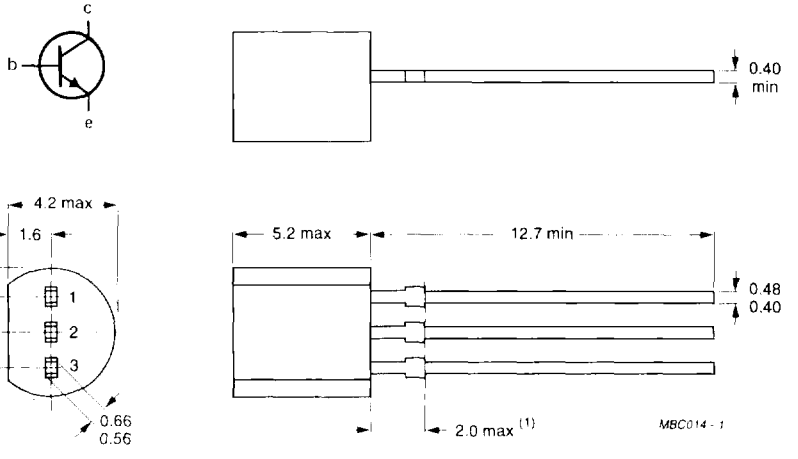
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

1 = collector
2 = base
3 = emitter



Note (1) Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			MPS3704	05	06	
Collector-emitter voltage (open base)	V_{CEO}	max.	30	30	20	V
Collector-base voltage (open emitter)	V_{CBO}	max.	50	50	40	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5		V
Collector current (DC)	I_C	max.		600		mA
Total power dissipation at $T_{amb} \leq 25\ ^oC$	P_{tot}	max.		625		mW
Storage temperature range	T_{stg}			−65 to + 150		^oC

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\text{-}a}$	=		200		K/W

CHARACTERISTICS

$T_j = 25\ ^oC$ unless otherwise specified

			MPS3704	05	06	
Collector-emitter breakdown voltage $I_B = 0$; $I_C = 10$ mA	$V_{(BR)CEO}$	min.	30	30	20	V
Collector-base breakdown voltage $I_C = 100\ \mu A$; $I_E = 0$	$V_{(BR)CBO}$	min.	50	50	40	V
Emitter-base breakdown voltage $I_C = 0$; $I_E = 100\ \mu A$	$V_{(BR)EBO}$	min.		5		V
Collector cut-off current $I_E = 0$; $V_{CB} = 20$ V	I_{CBO}	max.		100		nA
Emitter cut-off current $I_C = 0$; $V_{EB} = 3$ V	I_{EBO}	max.		100		nA
DC current gain $I_C = 50$ mA; $V_{CE} = 5$ V	h_{FE}	min. max.	100 300	50 150	30 600	
Collector-emitter saturation voltage $I_C = 100$ mA; $I_B = 5$ mA	V_{CEsat}	max.	0.6	0.8	1.0	V
Base-emitter on-state voltage $I_C = 100$ mA; $V_{CE} = 5$ V	$V_{BE(on)}$	min. max.		0.5 1.0		V V
Transition frequency at f = 100 MHz $I_C = 50$ mA; $V_{CE} = 5$ V	f_T	min.		100		MHz
Collector-base capacitance at f = 1 MHz $I_E = 0$; $V_{CB} = 10$ V	C_c	max.		12		pF