PHILIPS INTERNATIONAL 56E D 7110826 0042488 484 PHIN

SILICON PLANAR EPITAXIAL TRANSISTORS

T-27-21

NPN silicon planar epitaxial transistors, each in a plastic TO-92 envelope.
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 $T_{amb} \leqslant 25$ °C	P_{tot}	max.		625		mW
Collector-emitter saturation voltage I_C = 100 mA; I_B = 5 mA	V_{CEsat}	min.	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	

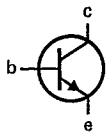
MECHANICAL DATA

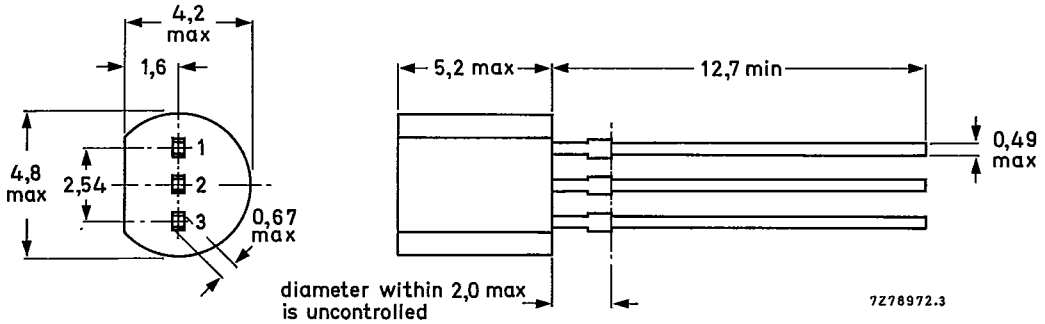
Dimensions in mm

Fig. 1 TO-92.

Pinning

1 = collector
2 = base
3 = emitter





Capability approved to CECC NECC-C-002

RATINGS

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

T-27-21

			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 $T_{amb} \leqslant 25\ ^oC$	P_{tot}	max.		625		mW
Storage temperature range	T_{stg}			−65 to + 150		°C

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_{ob}	max.		12		pF