

**MPS3706****NPN EPITAXIAL SILICON TRANSISTOR**

T-29-21

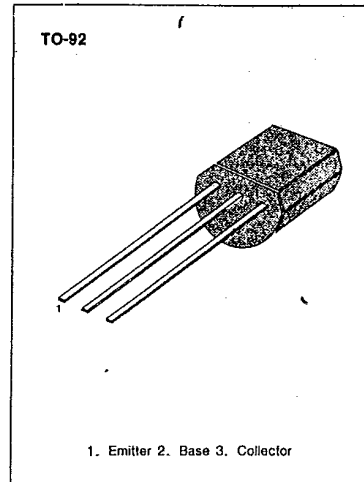
**GENERAL PURPOSE TRANSISTOR**

- Collector-Emitter Voltage:  $V_{CE0} = 20V$
- Collector Dissipation:  $P_C$  (max) = 625mW

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	600	mA
Collector Dissipation	$P_C$	625	mW
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 ~ 150	$^\circ C$

• Refer to 2N4400 for graphs



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**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )**

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 100\mu A, I_E = 0$	40			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 10mA, I_B = 0$	20			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = 100\mu A, I_C = 0$	5			V
Emitter Cut-off Current	$I_{EBO}$	$V_{BE} = 3V, I_C = 0$			100	nA
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 20V, I_E = 0$			100	nA
DC Current Gain	$h_{FE}$	$I_C = 50mA, V_{CE} = 2V$	30		600	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 5mA$			1	V
Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0$ $f = 1MHz$			12	pF
Current Gain Bandwidth Product	$f_T$	$I_C = 50mA, V_{CE} = 2V$ $f = 20MHz$	100			MHz
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 100mA, V_{CE} = 2V$	0.5		1	V

• Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$