

MPS3705**NPN EPITAXIAL SILICON TRANSISTOR**

T-29-21

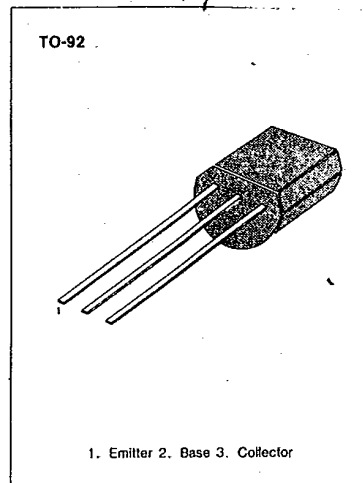
GENERAL PURPOSE TRANSISTOR

- Collector-Emitter Voltage: $V_{CE0} = 30V$
- Collector Dissipation: $P_c (\text{max}) = 625mW$

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	30	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}	$-55 \sim 150$	$^\circ C$

- Refer to 2N4400 for graphs

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_c = 100\mu A, I_E = 0$	50			V
*Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_c = 10mA, I_B = 0$	30			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}	$I_c = 50mA, V_{CE} = 2V$	50		150	
*Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_c = 100mA, I_B = 5mA$			0.8	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	$V_{BE} (\text{on})$	$I_c = 100mA, V_{CE} = 2V$	0.5		1	V

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

