

MPS2222A**NPN EPITAXIAL SILICON TRANSISTOR**

T-29-21

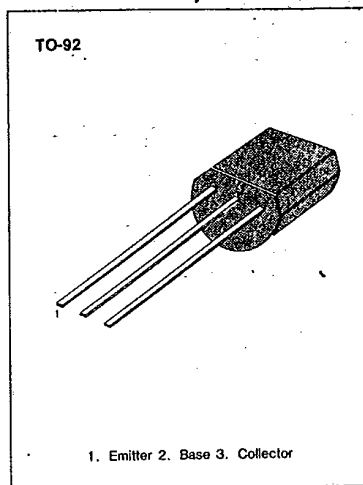
GENERAL PURPOSE TRANSISTOR

- Collector-Emitter Voltage: $V_{CE0} = 40V$
- Collector Dissipation: $P_C (\text{max}) = 625mW$

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	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 MPS2222 for graphs

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 10\mu A, I_E = 0$	75			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 10mA, I_B = 0$	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu A, I_C = 0$	6			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60V, I_E = 0$			0.01	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 3V, I_C = 0$			10	nA
DC Current Gain	h_{FE}	$I_C = 0.1mA, V_{CE} = 10V$	35			
		$I_C = 1mA, V_{CE} = 10V$	50			
		$I_C = 10mA, V_{CE} = 10V$	75			
		* $I_C = 150mA, V_{CE} = 10V$	100		300	
		* $I_C = 500mA, V_{CE} = 10V$	40			
*Collector-Emitter Saturation Voltage	$V_{CE} (\text{sat})$	$I_C = 150mA, I_B = 15mA$			0.3	V
		$I_C = 500mA, I_B = 50mA$			1	V
*Base-Emitter Saturation Voltage	$V_{BE} (\text{sat})$	$I_C = 150mA, I_B = 15mA$		0.6	1.2	V
		$I_C = 500mA, I_B = 50mA$			2	V
Current Gain Bandwidth Product	f_T	$I_C = 20mA, V_{CE} = 20V$ $f = 100MHz$	300			MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$			8	pF
Turn On Time	t_{on}	$V_{CC} = 30V, I_C = 150mA$ $I_{B1} = 15mA, V_{BE} (\text{off}) = 0.5V$			35	ns
Turn Off Time	t_{off}	$V_{CC} = 30V, I_C = 150mA$ $I_{B1} = I_{B2} = 15mA$			285	ns
Noise Figure	NF	$I_C = 100\mu A, V_{CE} = 10V$ $R_S = 1K\Omega, f = 1KHz$			4	dB

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
Also available as a PN2222A

