

**MPS2222**

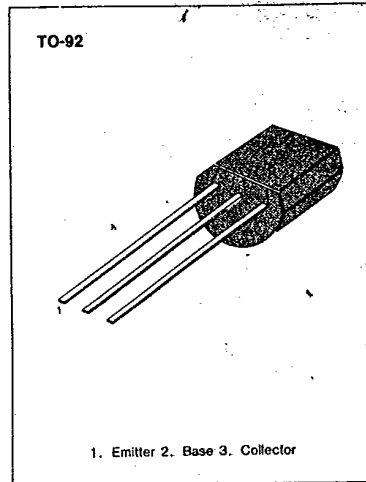
**NPN EPITAXIAL SILICON TRANSISTOR**

**GENERAL PURPOSE TRANSISTOR**

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

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CB0}$	60	V
Collector-Emitter Voltage	$V_{CE0}$	30	V
Emitter-Base Voltage	$V_{EB0}$	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	$^\circ C$



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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_c = 10\mu A, I_E = 0$	60			V
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	$I_c = 10mA, I_B = 0$	30			V
Emitter-Base Breakdown Voltage	$BV_{EB0}$	$I_E = 10\mu A, I_C = 0$	5			V
Collector Cut-off Current	$I_{CB0}$	$V_{CB} = 50V, I_E = 0$			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	
		$I_c = 500mA, V_{CE} = 10V$	30			
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_c = 150mA, I_B = 15mA$			0.4	V
		$I_c = 500mA, I_B = 50mA$			1.6	V
*Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_c = 150mA, I_B = 15mA$			1.3	V
		$I_c = 500mA, I_B = 50mA$			2.6	V
Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$			8	pF
Current Gain Bandwidth Product	$f_T$	$I_c = 20mA, V_{CE} = 20V, f = 100MHz$	250			MHz
Turn On Time	$t_{on}$	$V_{CC} = 30V, V_{BE} = 0.5V, I_c = 150mA, I_{B1} = 15mA$			35	ns
Turn Off Time	$t_{off}$	$V_{CC} = 30V, I_c = 150mA, I_{B1} = I_{B2} = 15mA$			285	ns

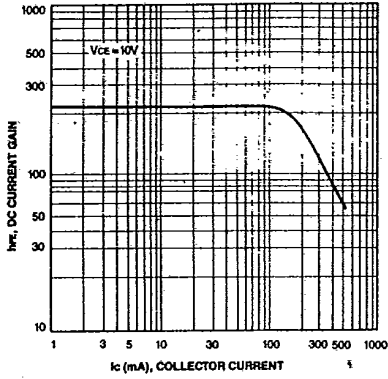
\* Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$   
 Also available as a PN2222

MPS2222

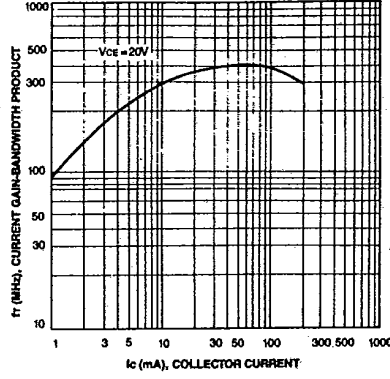
NPN EPITAXIAL SILICON TRANSISTOR

T-29-21

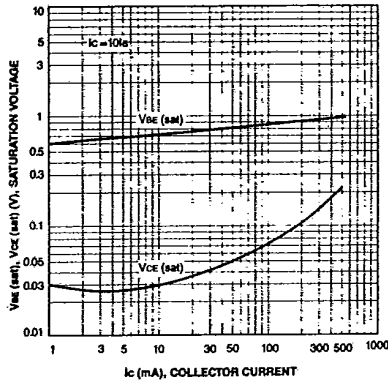
DC CURRENT GAIN



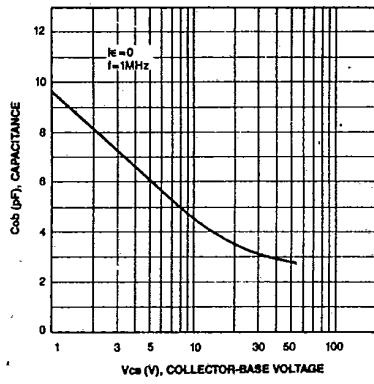
CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR-EMITTER SATURATION VOLTAGE  
BASE-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE



3