



TO-92 Plastic-Encapsulate Transistors

2N2222A TRANSISTOR (NPN)

FEATURE

Complementary NPN Type available (MPS2222)

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Power Dissipation	625	mW
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

TO-92

1. EMITTER
2. BASE
3. COLLECTOR



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$, $I_E = 0$	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = 0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB} = 60\text{V}$, $I_E = 0$		10	nA
Collector cut-off current	I_{CEX}	$V_{CE} = 60\text{V}$, $V_{EB(Off)} = 3\text{V}$		10	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3\text{V}$, $I_C = 0$		100	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = 10\text{V}$, $I_C = 150\text{mA}$	100	300	
	$h_{FE(2)}$	$V_{CE} = 10\text{V}$, $I_C = 0.1\text{mA}$	40		
	$h_{FE(3)}^*$	$V_{CE} = 10\text{V}$, $I_C = 500\text{mA}$	42		
Collector-emitter saturation voltage	$V_{CE(sat)(1)}^*$	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		0.6	V
	$V_{CE(sat)(2)}^*$	$I_C = 150\text{mA}$, $I_B = 15\text{mA}$		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		1.2	V
Delay time	t_d	$V_{CC} = 30\text{V}$, $V_{EB(Off)} = -0.5\text{V}$, $I_C = 150\text{mA}$, $I_{B1} = 15\text{mA}$		10	nS
Rise time	t_r			25	nS
Storage time	t_s	$V_{CC} = 30\text{V}$, $I_C = 150\text{mA}$, $I_{B1} = I_{B2} = 15\text{mA}$		225	nS
Fall time	t_f			60	nS
Transition frequency	f_T	$V_{CE} = 20\text{V}$, $I_C = 20\text{mA}$, $f = 100\text{MHz}$	300		MHz

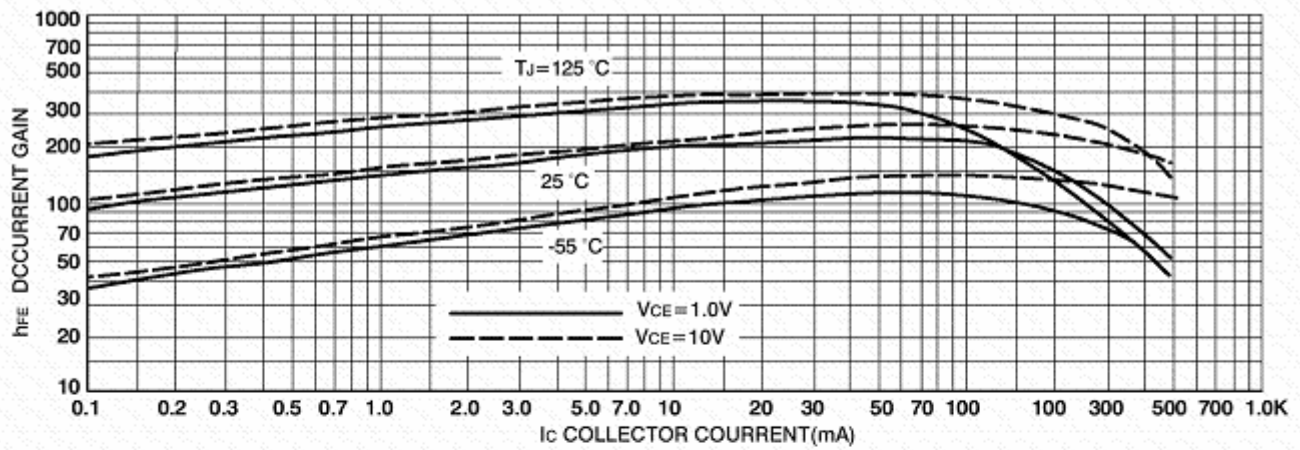
* pulse test

CLASSIFICATION OF $h_{FE(1)}$

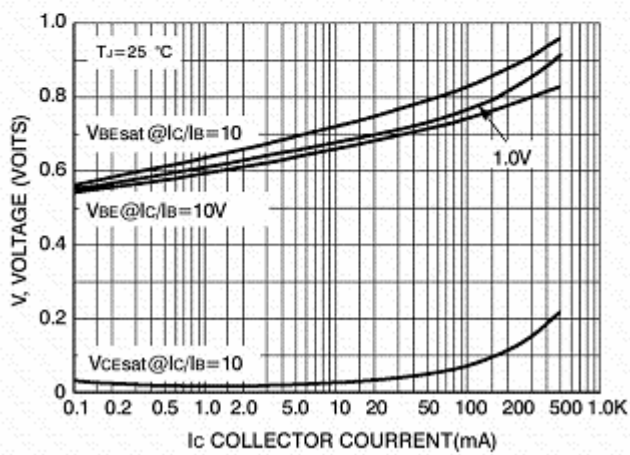
Rank	L	H
Range	100-200	200-300

Typical Characteristics

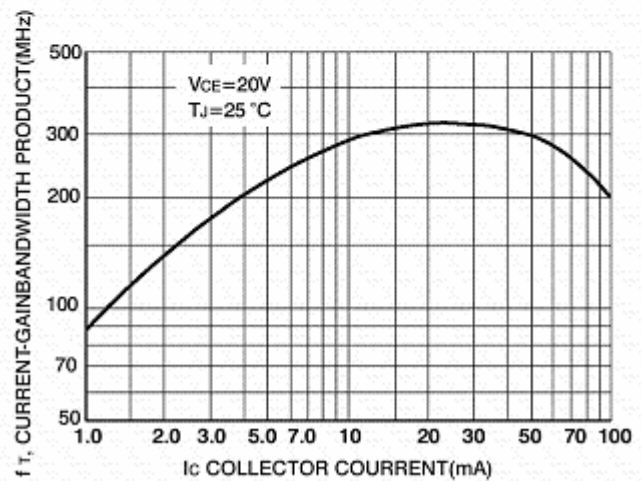
MPS2222A



DC Current Gain



"On" Volages



Current-Gain Bandwidth Product