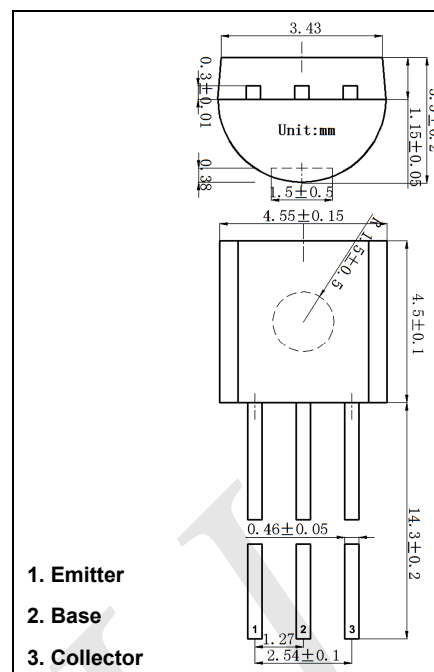


TO-92 Plastic-Encapsulate Transistors

2N2222A-338 NPN Transistors

Features

- Complementary NPN Type available (2N2907A)



Maximum Ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CB0}	Collector Base Voltage	75	V
V_{CE0}	Collector Emitter Voltage	40	V
V_{EB0}	Emitter Base Voltage	6	V
I_c	Collector Current	600	mA
P_c	Collector Power Dissipation	625	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 ~ +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = 10\mu\text{A}, I_E = 0$	75			V
$V_{(BR)CEO}^*$	Collector-emitter breakdown voltage	$I_C = 10\text{mA}, I_B = 0$	40			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = 10\mu\text{A}, I_C = 0$	6			V
I_{CBO}	Collector cut-off current	$V_{CB} = 60\text{V}, I_E = 0$			10	nA
I_{CEX}	Collector cut-off current	$V_{CE} = 60\text{V}, V_{EB(Off)} = 3\text{V}$			10	nA
I_{EBO}	Emitter cut-off current	$V_{EB} = 3\text{V}, I_C = 0$			100	nA
$h_{FE(1)}$	DC current gain	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	100			
$h_{FE(2)}$		$V_{CE} = 10\text{V}, I_C = 150\text{mA}$	100		300	
$h_{FE(3)}$		$V_{CE} = 10\text{V}, I_C = 0.1\text{mA}$	40			
$h_{FE(4)}^*$		$V_{CE} = 10\text{V}, I_C = 500\text{mA}$	42			
$V_{CE(sat)}^*$	Collector-emitter saturation voltage	$I_C = 150\text{mA}, I_B = 15\text{mA}$			0.3	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.6	V
$V_{BE(sat)}^*$	Base-emitter saturation voltage	$I_C = 500\text{mA}, I_B = 50\text{mA}$			1.2	V
f_T	Transition frequency	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	300			MHz
t_d	Delay time	$V_{CC} = 30\text{V}, V_{EB(Off)} = -0.5\text{V},$ $I_C = 150\text{mA}, I_{B1} = 15\text{mA}$			10	ns
t_r	Rise time				25	ns
t_s	Storage time	$V_{CC} = 30\text{V}, I_C = 150\text{mA},$ $I_{B1} = I_{B2} = 15\text{mA}$			225	ns
t_f	Fall time				60	ns

*pulse test

Classification OF $h_{FE(1)}$

Rank	L	H
Range	100-200	200-300

Typical Characteristics

