

SOT-89-3L Plastic-Encapsulate Transistors

HM4033 TRANSISTOR (PNP)

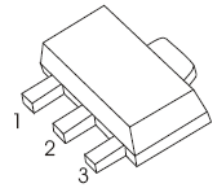
FEATURES

- High Current
- General Purpose Amplifier Applications

MARKING:H4033

SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	-80	V
V_{CE0}	Collector-Emitter Voltage	-80	V
V_{EB0}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-1	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	$^{\circ}\text{C}/\text{W}$
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)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-60\text{V}, I_E=0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-100	nA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=-5\text{V}, I_C=-0.1\text{mA}$	75			
	$h_{FE(2)}^*$	$V_{CE}=-5\text{V}, I_C=-100\text{mA}$	100			
	$h_{FE(3)}^*$	$V_{CE}=-5\text{V}, I_C=-500\text{mA}$	70			
	$h_{FE(4)}^*$	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.15	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=-150\text{mA}, I_B=-15\text{mA}$			-0.9	V
		$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.1	V
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}, f=100\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$			20	pF

*Pulse test