



DONGGUAN NANJING ELECTRONICS LTD.,

SOT-89-3L Plastic-Encapsulate Transistors

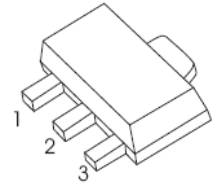
2SA1213 TRANSISTOR (PNP)

FEATURES

- Complementary to 2SC2873
- Small Flat Package
- Power Amplifier and Switching Applications
- Low Saturation Voltage
- High Speed Switching Time

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_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-2	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	$^\circ\text{C/W}$
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	$V_{(BR)CBO}$	$I_C = -0.1\text{mA}, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -0.1\text{mA}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-100	nA
DC current gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	70		240	
		$V_{CE} = -2\text{V}, I_C = -2\text{A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1\text{A}, I_B = -50\text{mA}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -1\text{A}, I_B = -50\text{mA}$			-1.2	V
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		40		pF
Transition frequency	f_T	$V_{CE} = -2\text{V}, I_C = -0.5\text{A}$	100			MHz

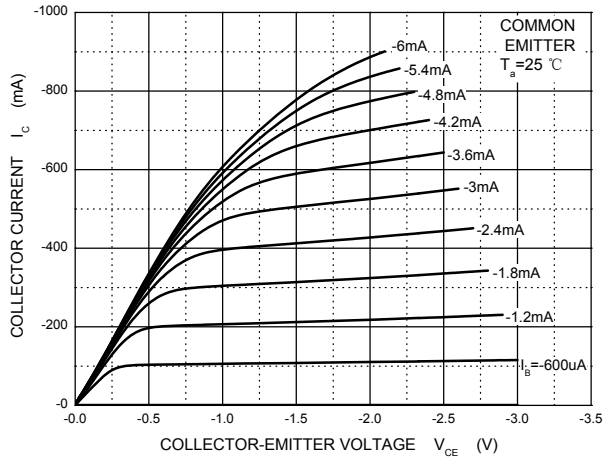
CLASSIFICATION OF h_{FE}

RANK	O	Y
RANGE	70 - 140	120 - 240
MARKING	NO	NY

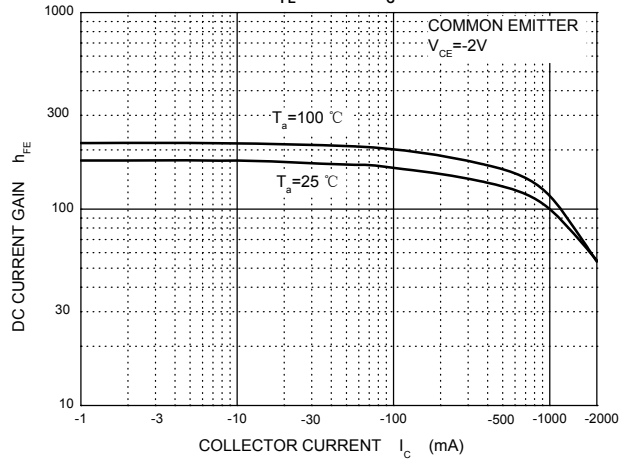
Typical Characteristics

2SA1213

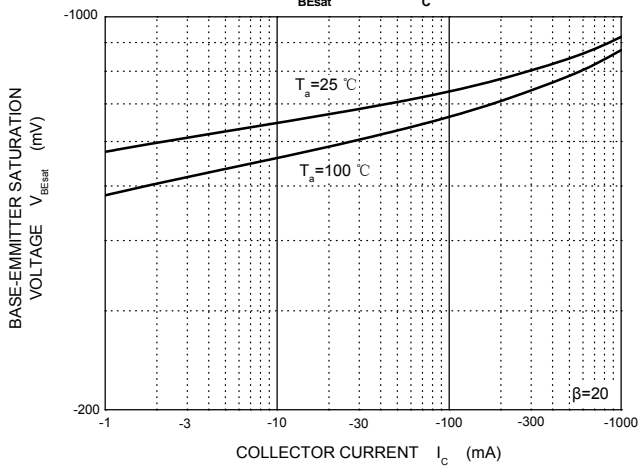
Static Characteristic



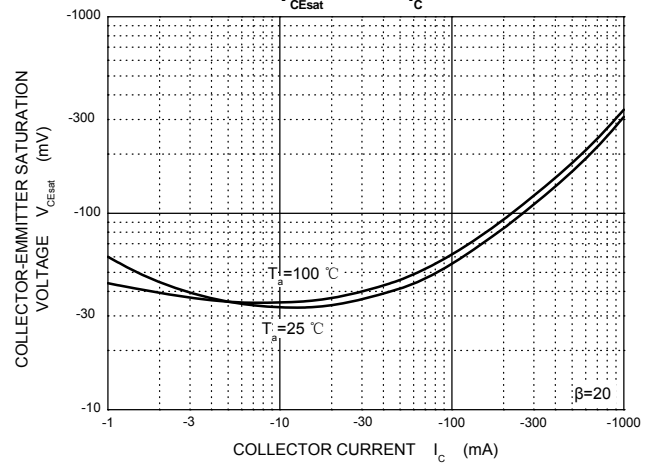
h_{FE} — I_c



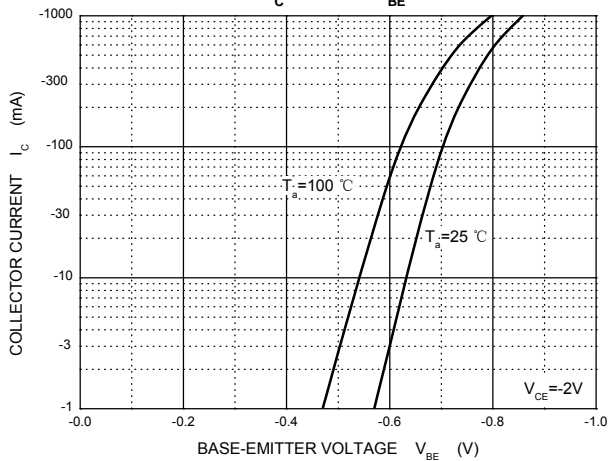
V_{BEsat} — I_c



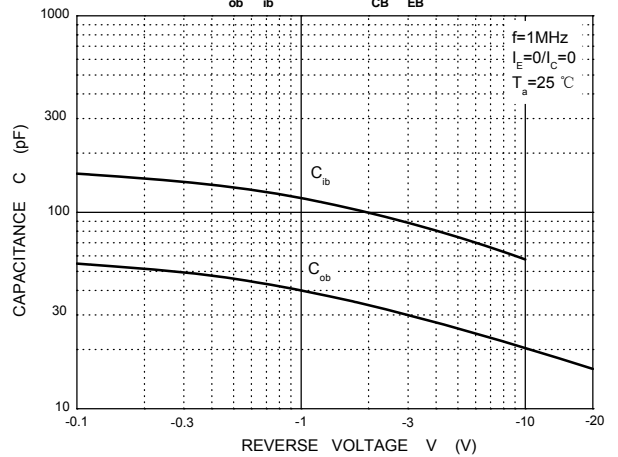
V_{CEsat} — I_c



I_c — V_{BE}



C_{ob}/C_{ib} — V_{CE}/V_{EB}



P_c — T_a

