

SOT-323 Plastic-Encapsulate Transistors

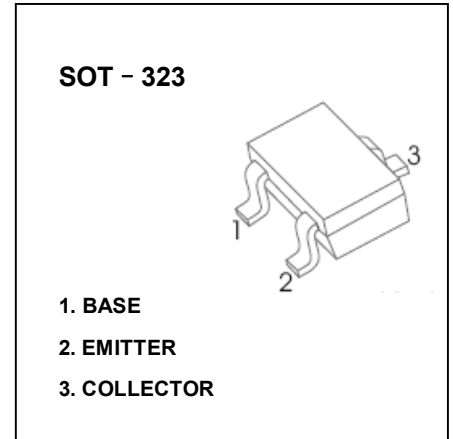
TRANSISTOR (NPN)

FEATURES

- High DC Current Gain
- Complementary to 2SA1611
- High Voltage

APPLICATIONS

- General Purpose Amplification



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_{C}	Collector Current	100	mA
P_{C}	Collector Power Dissipation	150	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	833	$^{\circ}\text{C}/\text{W}$
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	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=100\mu\text{A}, I_{\text{E}}=0$	60			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	50			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=100\mu\text{A}, I_{\text{C}}=0$	5			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=60\text{V}, I_{\text{E}}=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=5\text{V}, I_{\text{C}}=0$			100	nA
DC current gain	h_{FE}^*	$V_{\text{CE}}=6\text{V}, I_{\text{C}}=1\text{mA}$	90		600	
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	$I_{\text{C}}=100\text{mA}, I_{\text{B}}=10\text{mA}$			0.3	V
Base-emitter saturation voltage	$V_{\text{BE}(\text{sat})}$	$I_{\text{C}}=100\text{mA}, I_{\text{B}}=10\text{mA}$			1	V
Base-emitter voltage	V_{BE}	$V_{\text{CE}}=6\text{V}, I_{\text{C}}=1\text{mA}$	0.55		0.65	V
Transition frequency	f_{T}	$V_{\text{CE}}=6\text{V}, I_{\text{C}}=10\text{mA}$		250		MHz
Collector output capacitance	C_{ob}	$V_{\text{CB}}=6\text{V}, I_{\text{E}}=0, f=1\text{MHz}$		3		pF

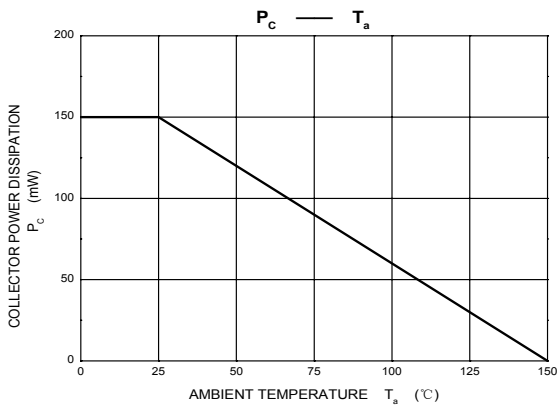
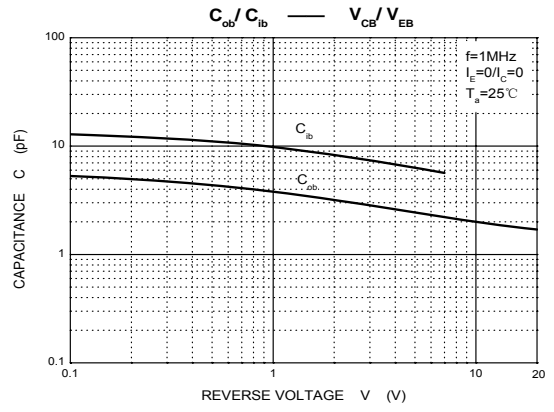
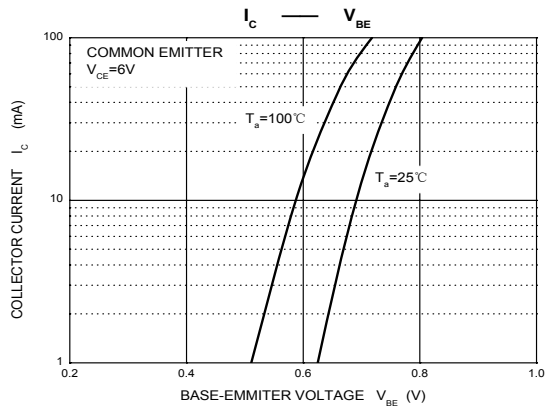
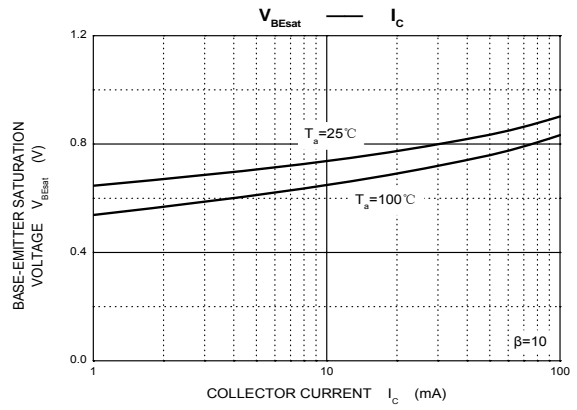
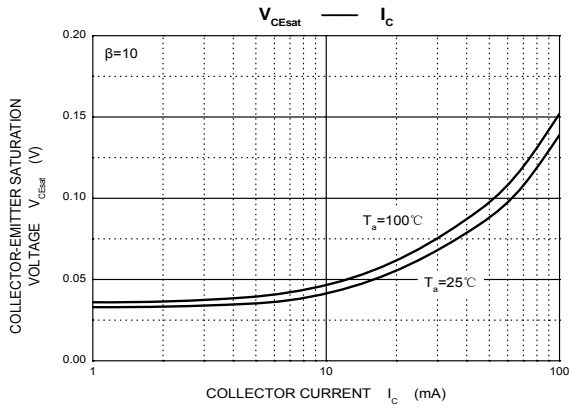
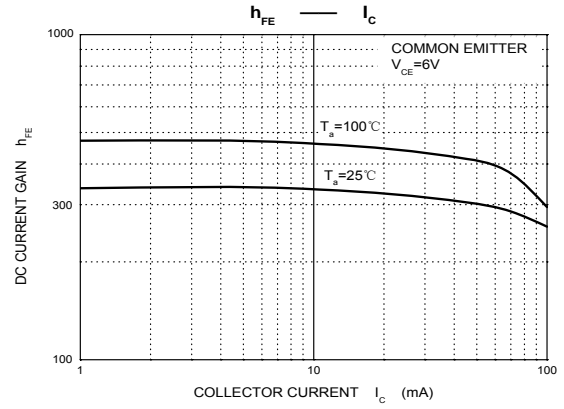
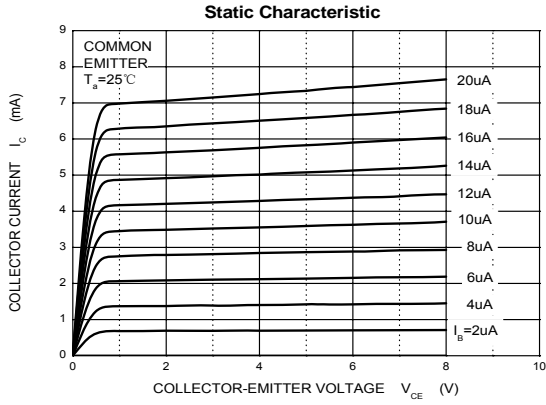
*Pulse test: pulse width $\leq 350\mu\text{s}$, duty cycles $\leq 2.0\%$.

CLASSIFICATION OF h_{FE}

RANK	L4	L5	L6	L7
RANGE	90 - 180	135 - 270	200 - 400	300 - 600
MARKING	L4	L5	L6	L7

Typical Characteristics

2SC4177



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