



## SOT-323 Plastic-Encapsulated Transistors

### 2SA1611 TRANSISTOR (PNP)

#### FEATURES

Power dissipation

$$P_{CM} : 0.15 \text{ W (Tamb=25°C)}$$

Collector current

$$I_{CM} : -0.1 \text{ A}$$

Collector-base voltage

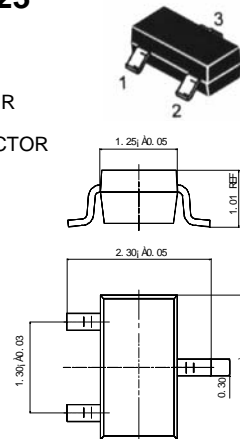
$$V_{(BR)CBO} : -60 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55°C \text{ to } +150°C$$

#### SOT-323

1. BASE
2. EMITTER
3. COLLECTOR



Unit: mm

#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu A, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -60V, I_E = 0$			-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE} = -6V, I_C = -1mA$	90		600	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$			-0.3	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -6V, I_C = -1mA$	-0.58		-0.68	V
Transition frequency	$f_T$	$V_{CE} = -6V, I_C = -10mA$		180		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$		4.5		pF

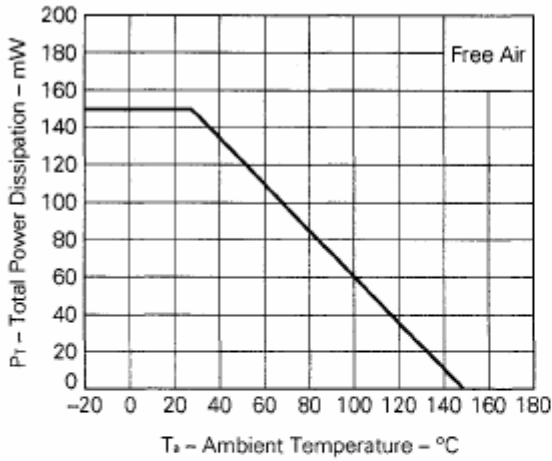
#### CLASSIFICATION OF $h_{FE(1)}$

Rank	M4	M5	M6	M7
Range	90-180	135-270	200-400	300-600
Marking	M4	M5	M6	M7

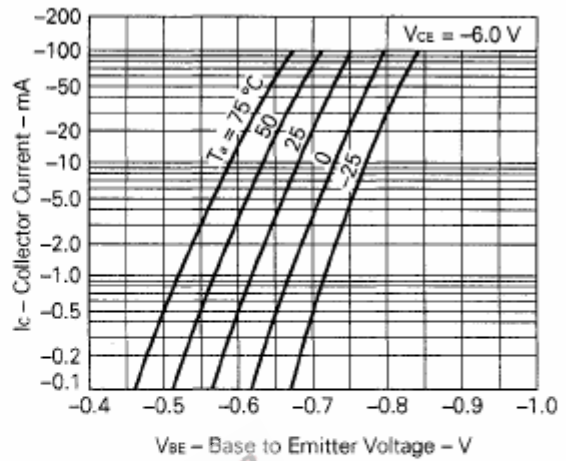
# Typical Characteristics

# 2SA1611

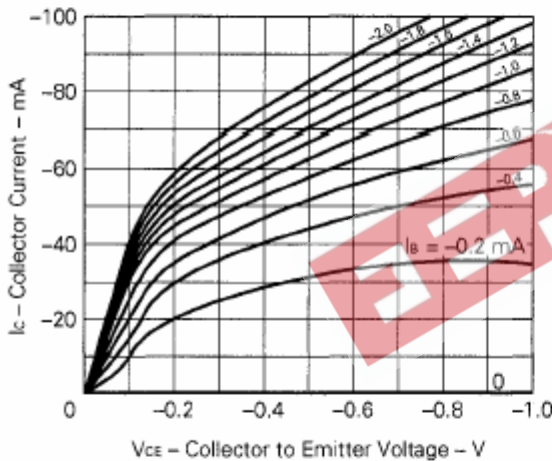
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



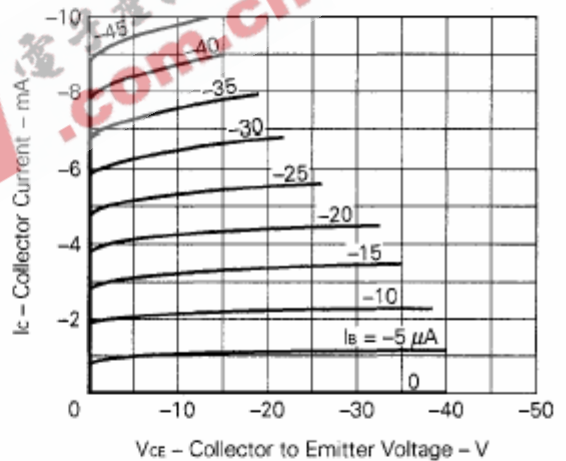
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



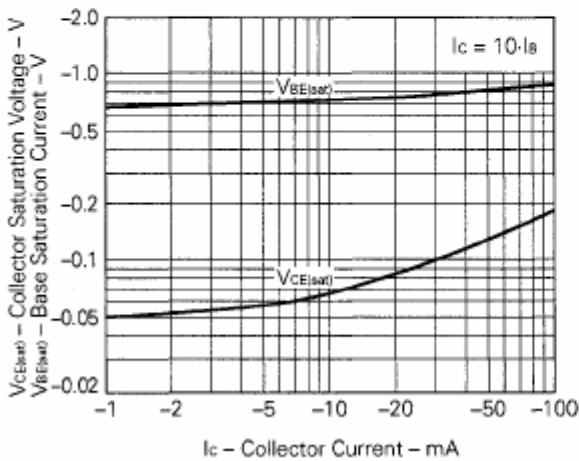
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT

