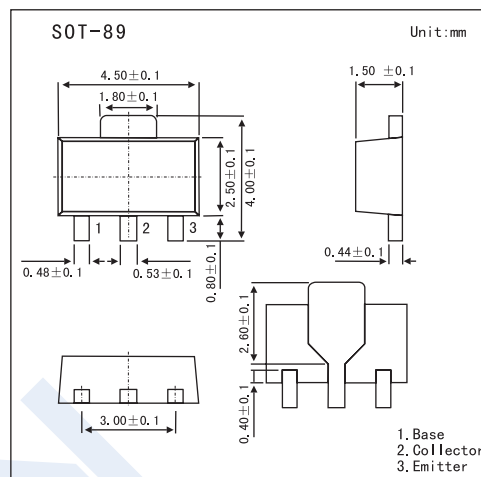


High-Speed Switching Applications

2SA1729

■ Features

- Adoption of FBET, MBIT Process.
- Large Current Capacity.
- Low Collector-to-Emitter Saturation Voltage.
- High-Speed Switching.
- Small-Sized Package.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-50	V
Collector-Emitter Voltage	V_{CE0}	-40	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current	I_C	-1.5	A
Collector Current (Pulse)	I_{CP}	-3	A
Collector Dissipation	P_C *	1.3	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

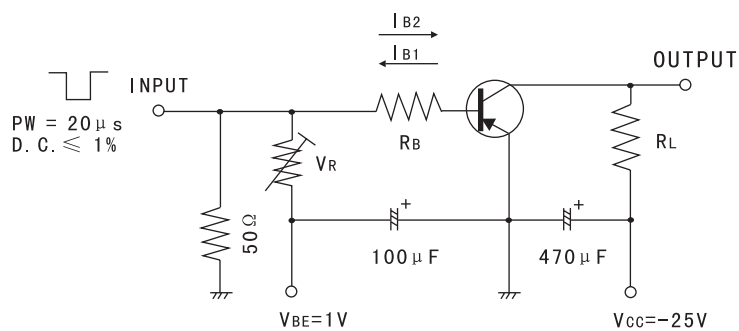
* Mounted on ceramic board (250 mm² x 0.8 mm)

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector Cut-off Current	I_{CBO}	$V_{CB} = -40\text{V}$, $I_E = 0$			-1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			-1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -100\text{mA}$	70		280	
		$V_{CE} = -2\text{V}$, $I_C = -1.5\text{A}$	25			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -800\text{mA}$, $I_B = -40\text{mA}$		-0.3	-0.8	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -800\text{mA}$, $I_B = -40\text{mA}$		-0.9	-1.3	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$, $R_{BE} = \infty$	-40			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}$, $I_C = 0$	-5			V
Gain-Bandwidth Product	f_T	$V_{CE} = -2\text{V}$, $I_C = -100\text{mA}$		300		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$		18		pF
Turn-ON Time	t_{on}	See Test Circuit		50	100	ns
Storage Time	t_{stg}			120	220	ns
Turn-OFF Time	t_{off}			150	300	ns

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■ Test Circuit

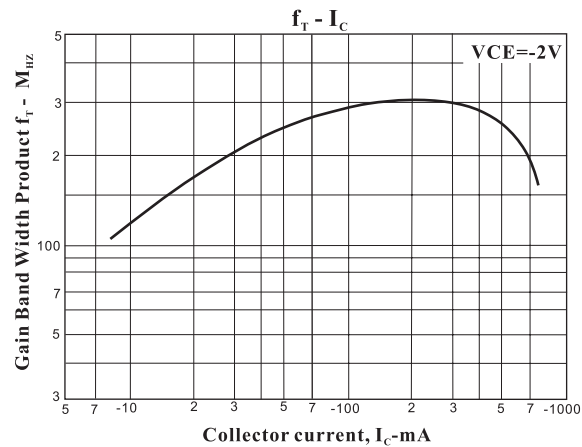
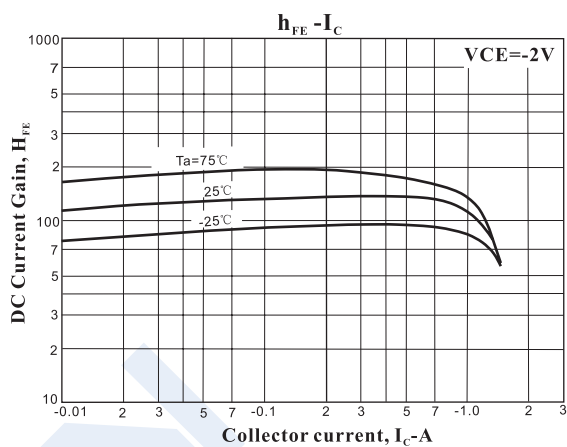
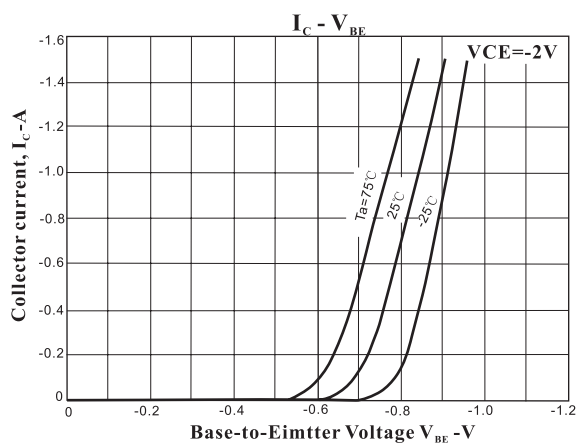
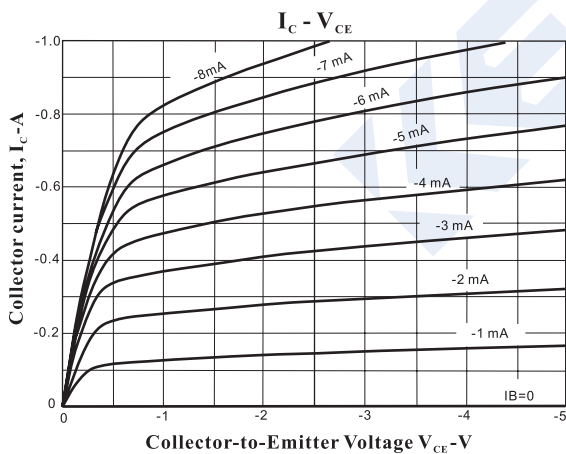


$$20I_{B1} = -20I_{B2} = I_C = -800\text{mA}$$

■ hFE Classification

Marking	AG		
Rank	Q	R	S
hFE	70 ~ 140	100 ~ 200	140 ~ 280

■ Electrical Characteristics Curves



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