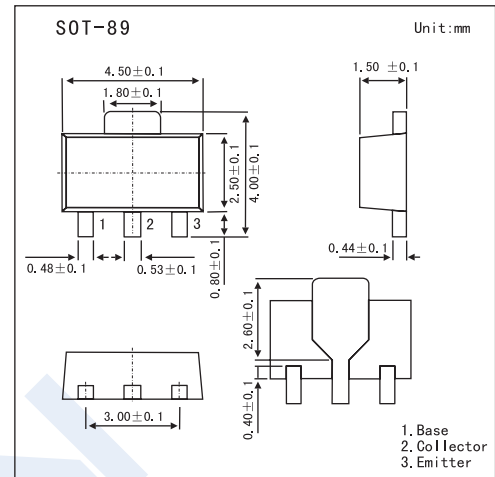


## High-Speed Switching Applications

## 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	$^\circ\text{C}$

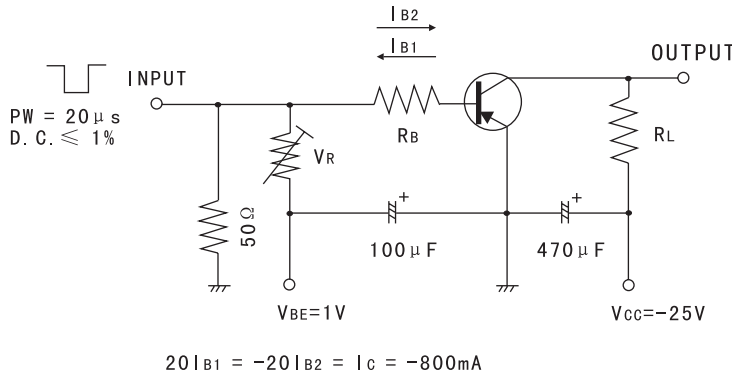
\* Mounted on ceramic board (250 mm<sup>2</sup> x 0.8 mm)

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -40\text{V}$ , $I_E = 0$			-1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -3\text{V}$ , $I_C = 0$			-1	$\mu\text{A}$
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

### 2SA1729

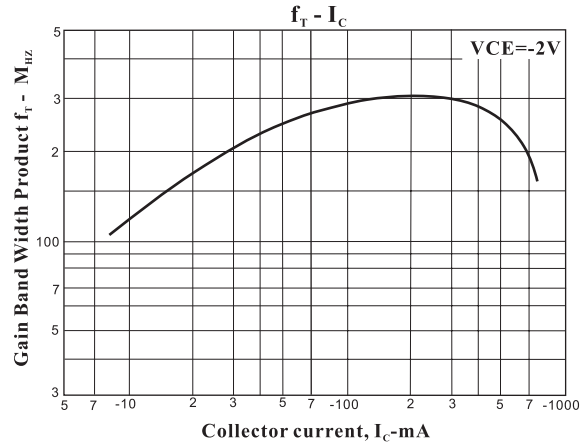
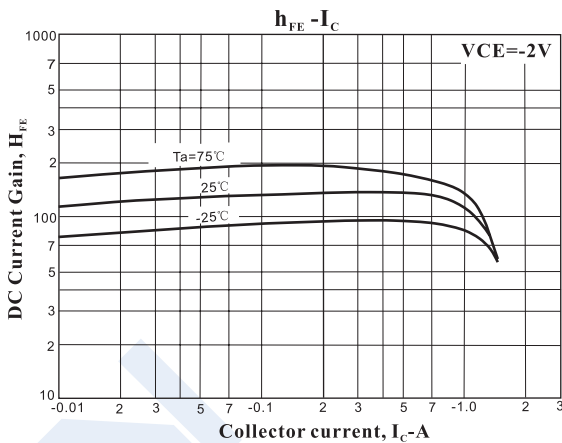
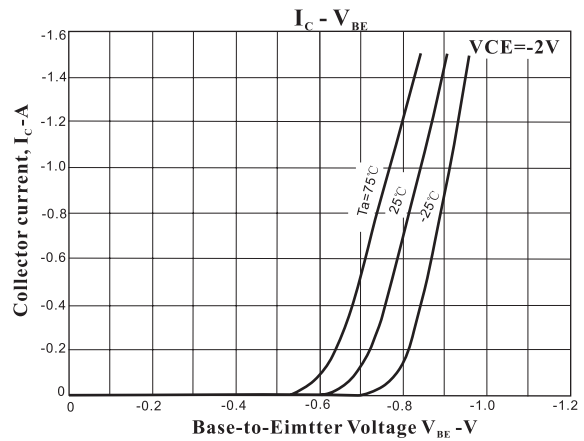
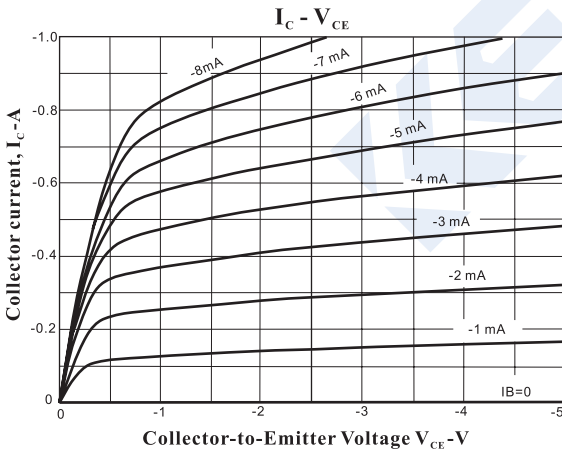
■ Test Circuit



■ hFE Classification

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

■ Electrical Characteristics Curves



# 2SA1729

