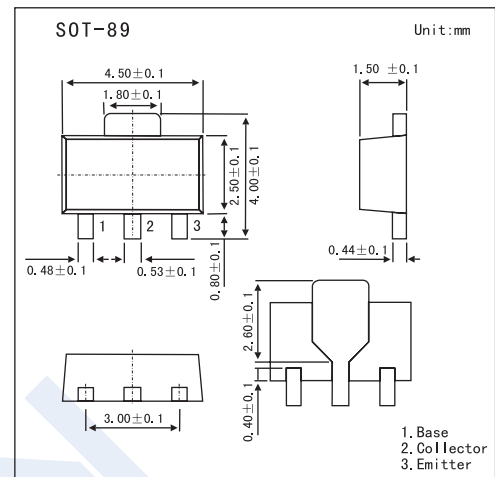


High-Voltage Driver Applications

2SA1740

■ Features

- High Breakdown Voltage
- Adoption of MBIT Process
- Excellent h_{FE} Linearity.

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

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	-400	V
Collector-Emitter Voltage	V_{CE0}	-400	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current	I_C	-200	mA
Collector Current (Pulse)	I_{CP}	-400	mA
Collector Power Dissipation	P_C^*	1.3	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

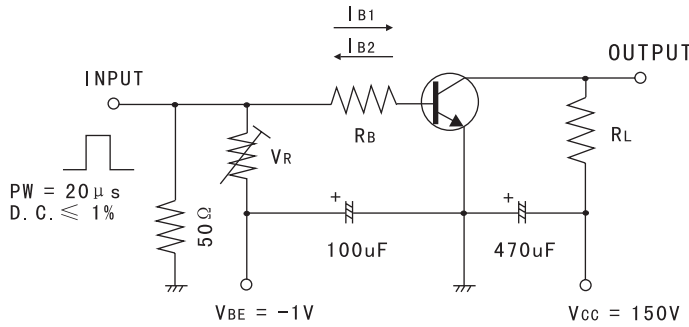
* Mounted on ceramic board (250 mm² x 0.8 mm)

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector Cut-off Current	I_{CBO}	$V_{CB} = -300\text{V}$, $I_E = 0$			-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -4\text{V}$, $I_C = 0$			-0.1	μA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-400			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$, $R_{BE} = \infty$	-400			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}$, $I_C = 0$	-5			V
DC Current Gain	h_{FE}	$V_{CE} = -10\text{V}$, $I_C = -50\text{mA}$	60		200	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}$, $I_B = -5\text{mA}$			-0.8	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -50\text{mA}$, $I_B = -5\text{mA}$			-1.0	V
Gain-Bandwidth Product	f_T	$V_{CE} = -30\text{V}$, $I_C = -10\text{mA}$		70		MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -30\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		5		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = -30\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		4		pF
Turn-On Time	t_{on}	See Test Circuit.		0.25		μs
Turn-Off Time	t_{off}			5.0		

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■ Test Circuit

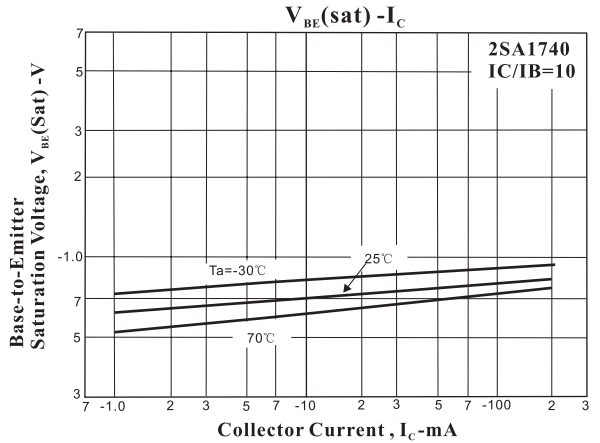
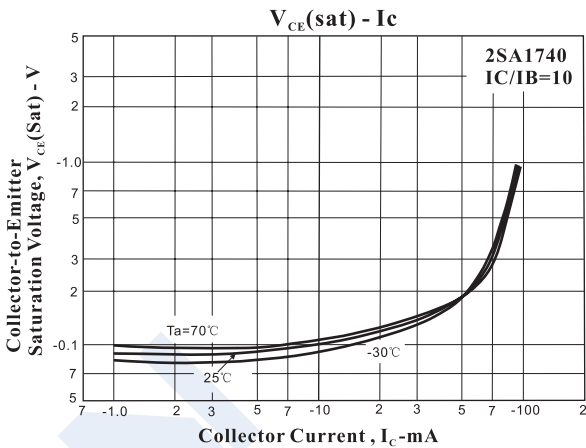
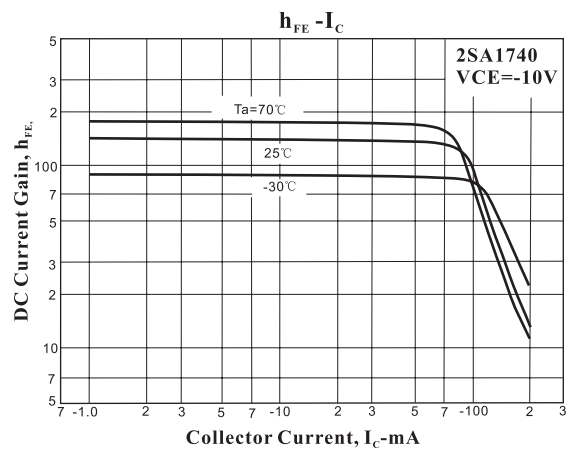
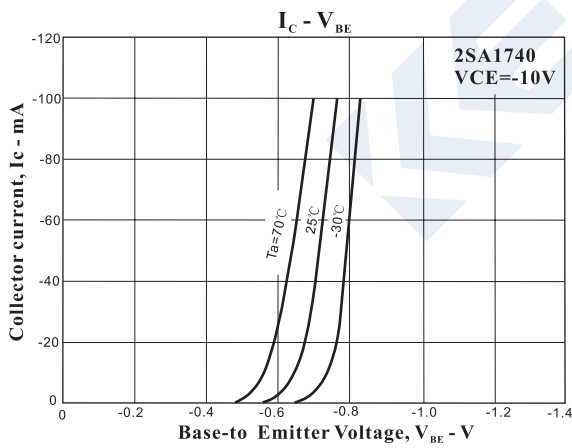


$10 I_{B1} = -10 I_{B2} = I_C = 50\text{mA}$
 $R_L = 3\text{k}\Omega, R_B = 200\Omega$ at $I_C = 50\text{mA}$
 The polarity is reversed.

■ hFE Classification

Marking	AK	
Rank	D	E
hFE	60 ~ 120	100 ~ 200

■ Electrical Characteristics Curves



2SA1740

