



2SA2016

PNP PLANAR TRANSISTOR

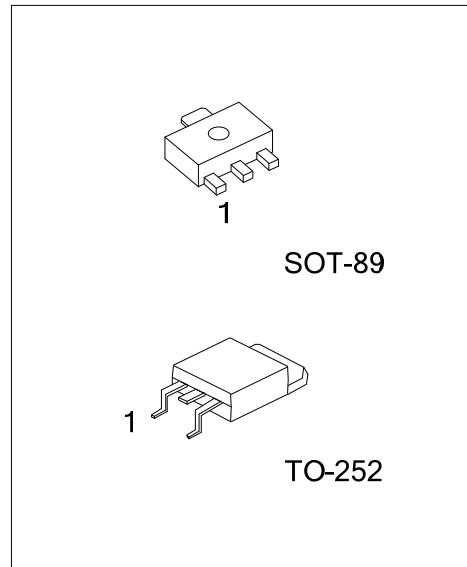
PNP EPITAXIAL PLANAR TRANSISTOR

■ APPLICATIONS

* Relay drivers, lamp drivers, motor drivers, strobes.

■ FEATURES

- *High current capacitance.
- *Low collector-to-emitter saturation voltage.
- *High-speed switching
- *High allowable power dissipation.



■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	2SA2016G-AB3-R	SOT-89	B	C	E	Tape Reel
2SA2016L-TN3-R	2SA2016G-TN3-R	TO-252	B	C	E	Tape Reel

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>2SA2016G-AB3-R</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) AB3: SOT-89, TN3: TO-252</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-89	TO-252

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT	
Collector-Base Voltage	V_{CBO}	-50	V	
Collector-Emitter Voltage	V_{CEO}	-50	V	
Emitter-Base Voltage	V_{EBO}	-6	V	
Collector Dissipation Mounted on a ceramic board (250mm ² *0.8mm)	SOT-89	P_C	1.3	W
	TO-252		1.9	W
Collector Dissipation ($T_C=25^\circ\text{C}$)	SOT-89	P_C	3.5	W
	TO-252		15	W
Collector Current	I_C	-7	A	
Collector Current	I_{CP}	-10	A	
Base Current	I_B	-1.2	A	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

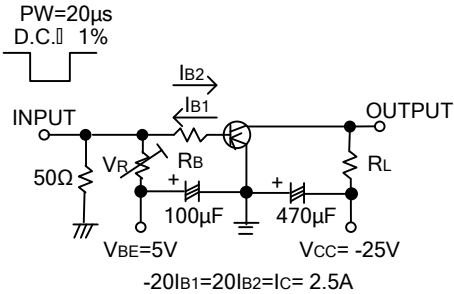
■ THERMAL RESISTANCES CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT	
Junction to Ambient	SOT-89	θ_{JA}	96.2	$^\circ\text{C/W}$
	TO-252		65.8	$^\circ\text{C/W}$
Junction to Case	SOT-89	θ_{JC}	35.7	$^\circ\text{C/W}$
	TO-252		8.3	$^\circ\text{C/W}$

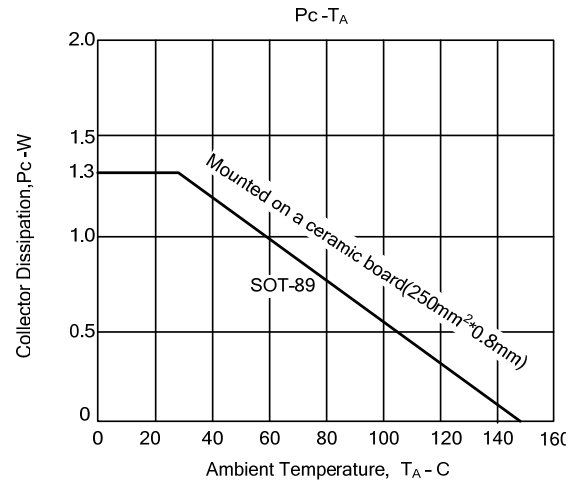
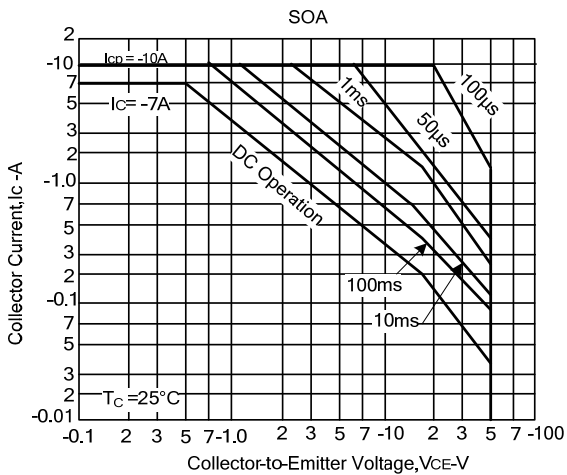
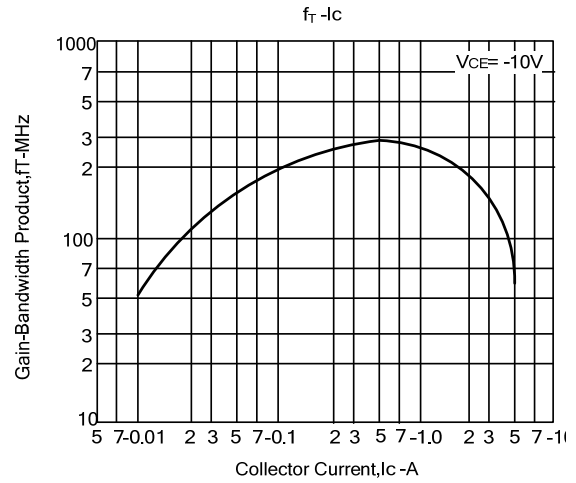
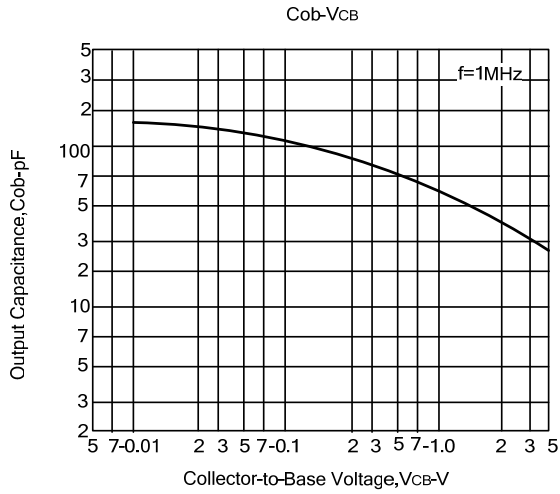
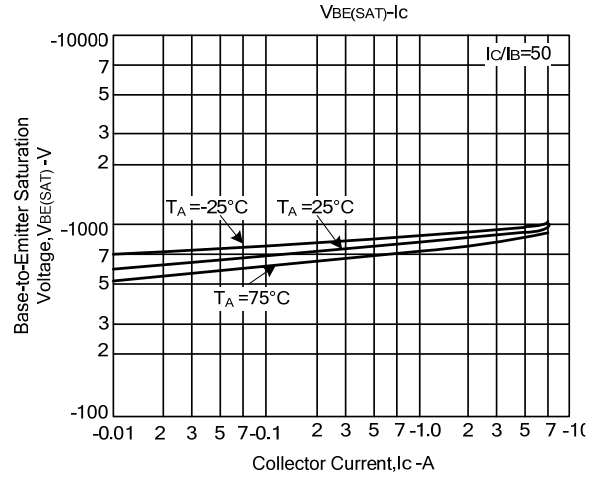
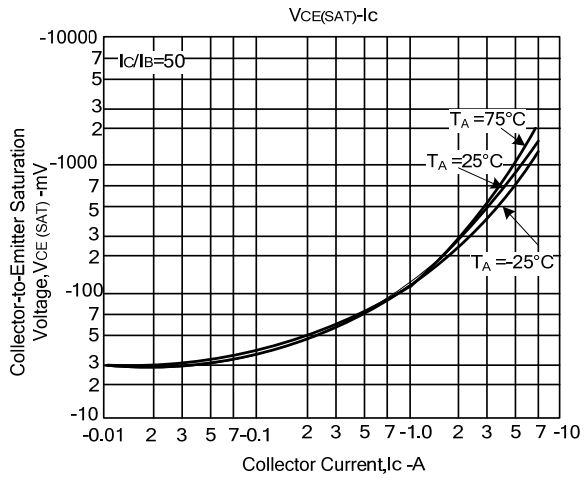
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-to-Base Breakdown Voltage	BV_{CBO}	$I_C = -10\mu\text{A}$, $I_E = 0$	-50			V
Collector-to- Emitter Breakdown Voltage	BV_{CEO}	$I_C = -1\text{mA}$, $R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	BV_{EBO}	$I_C = 0$, $I_E = -10\mu\text{A}$	-6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -40\text{V}$, $I_E = 0$			-0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = -4\text{V}$, $I_C = 0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -500\text{mA}$	200		560	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -3.5\text{A}$, $I_B = -175\text{mA}$		-0.23	-0.39	V
		$I_C = -2\text{A}$, $I_B = -40\text{mA}$		-0.24	-0.40	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -2\text{A}$, $I_B = -40\text{mA}$		-0.83	-1.2	V
Gain Bandwidth Product	f_T	$V_{CE} = -10\text{V}$, $I_C = -500\text{mA}$		290		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$		50		pF
Turn-on Time	t_{ON}	See specified Test Circuit		40		ns
Storage Time	t_{STG}	See specified Test Circuit		225		ns
Fall Time	t_F	See specified Test Circuit		25		ns

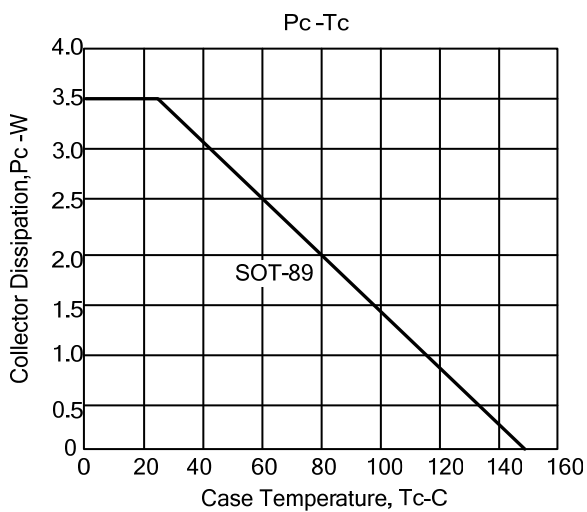
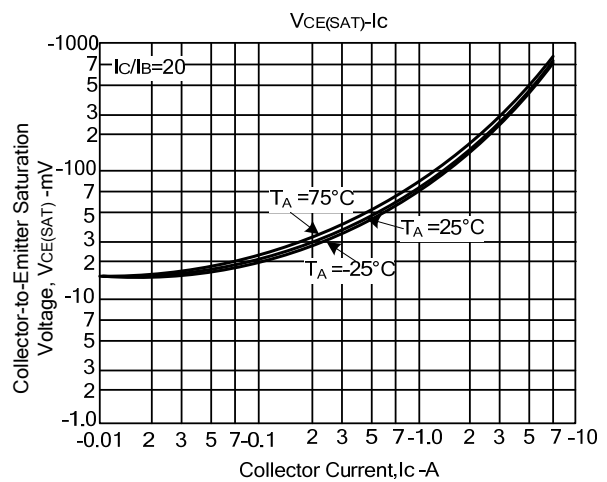
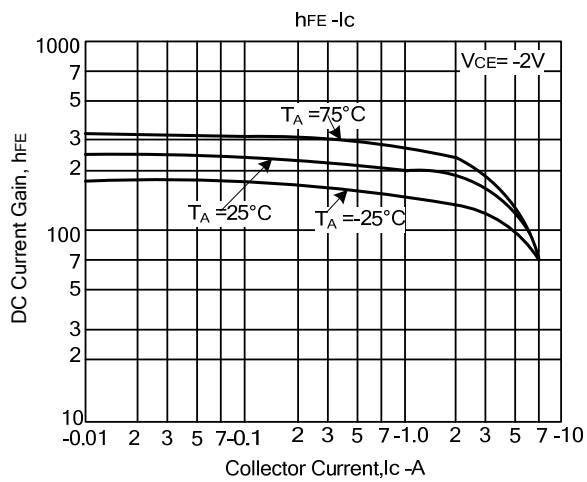
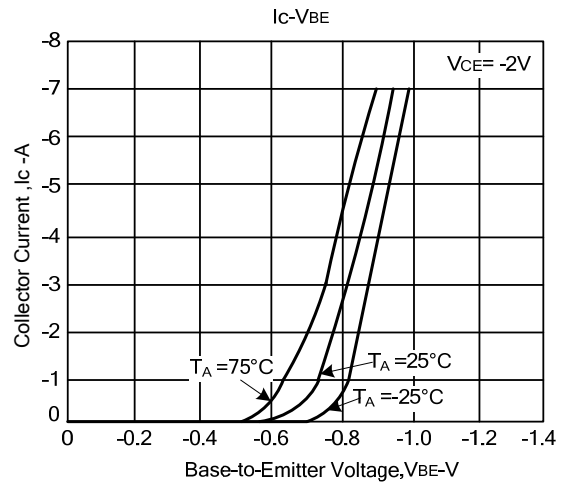
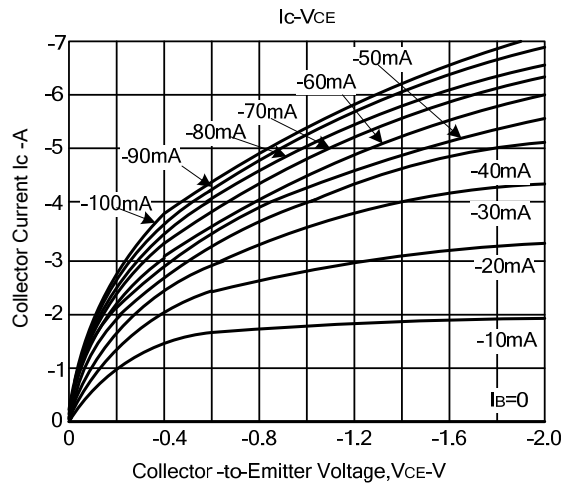
■ SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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