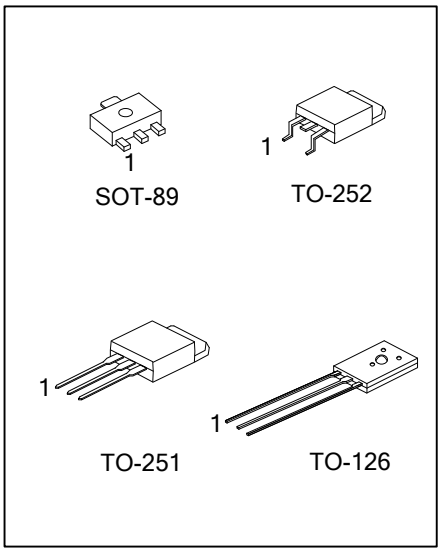
2SB824

PNP SILICON TRANSISTOR

PNP PLANAR SILICON TRANSISTOR



■ FEATURES

* Low collector-to-emitter saturation voltage:
  $V_{CE(SAT)}$=-0.4V max/I_C=-3A, I_B=-0.3A

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SB824L-x-AB3-R	2SB824G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SB824L-x-T60-K	2SB824G-x-T60-K	TO-126	B	C	E	Bulk
2SB824L-x-TM3-T	2SB824G-x-TM3-T	TO-251	B	C	E	Tube
2SB824L-x-TN3-R	2SB824G-x-TN3-R	TO-252	B	C	E	Tape Reel

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

2SB824G-x-AB3-R
(1)Packing Type
(2)Package Type
(3)Rank
(4)Green Package

(1) K: Bulk, R: Tape Reel, T: Tube
(2) T60: TO-126, AB3: SOT-89, TM3: TO-251, TN3: TO-252
(3) x: refer to Classification of h_{FE1}
(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

PACKAGE	MARKING
SOT-89	□□□□ / 2SB824□ → Data Code; L: Lead Free; G: Halogen Free; 1
TO-126	UTC □□□□ / 2SB824□ → Data Code; L: Lead Free; G: Halogen Free; 1
TO-251 / TO-252	UTC / 2SB824□ → L: Lead Free; G: Halogen Free; □□□□□□ → Data Code; Lot Code; 1

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		V_{CBO}	-60	V
Collector to Emitter Voltage		V_{CEO}	-50	V
Emitter to Base Voltage		V_{EBO}	-6	V
Collector Current		I_C	-5	A
Collector Current (Pulse)		I_{CP}	-9	A
Collector Dissipation	SOT-89	P_C	0.5	W
	TO-126/TO-251 TO-252		1	
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-40 ~ +150	°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.

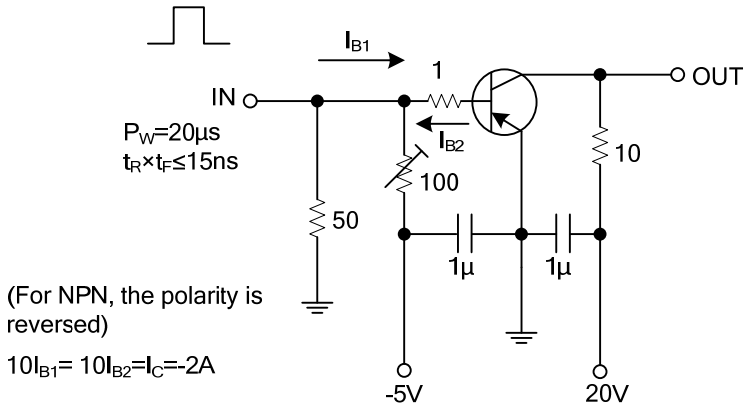
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-to-Base Breakdown Voltage	BV_{CBO}	I_C =-1mA, I_E=0	-60			V
Collector-to-Emitter Breakdown Voltage	BV_{CEO}	I_C=-1mA, R_{BE} =∞	-50			V
Emitter-to-Base Breakdown Voltage	BV_{EBO}	I_C =0, I_E=-1mA	-6			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-40V, I_E=0			-0.1	mA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-4V, I_C=0			-0.1	mA
DC Current Gain	h_{FE1}	V_{CE}=-2V, I_C=-1A	70		360	
	h_{FE2}	V_{CE}=-2V, I_C=-3A	30			
Gain Bandwidth Product	f_T	V_{CE} =-5V, I_C =-1A		30		MHZ
Output Capacitance	C_{OB}	V_{CB} =-10V, f=1MHz		100		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-3A, I_B=-0.3A			-0.4	V
Turn-ON Time	t_{ON}	See specified test circuit		0.1		μs
Storage Time	t_{STG}	See specified test circuit		1.4		μs
Fall Time	t_F	See specified test circuit		0.2		μs

■ CLASSIFICATION of h_{FE1}

RANK	Q	R	S
RANGE	70-140	100-200	180-360

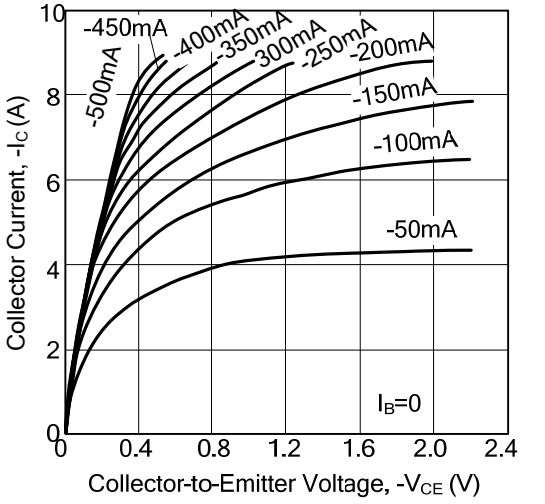
■ SWITCHING TIME TEST CIRCUIT



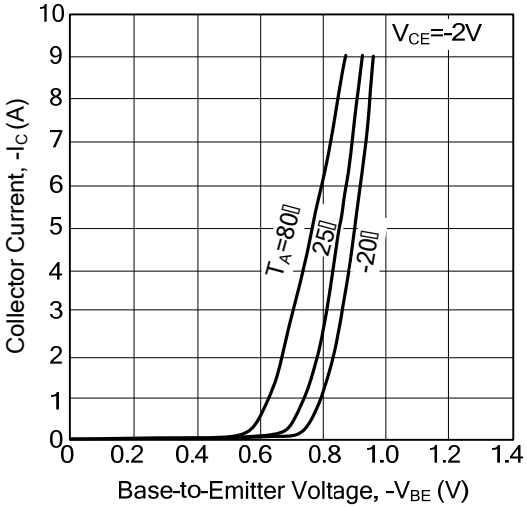
Unit (resistance: Ω, capacitance: F)

■ TYPICAL CHARACTERISTICS

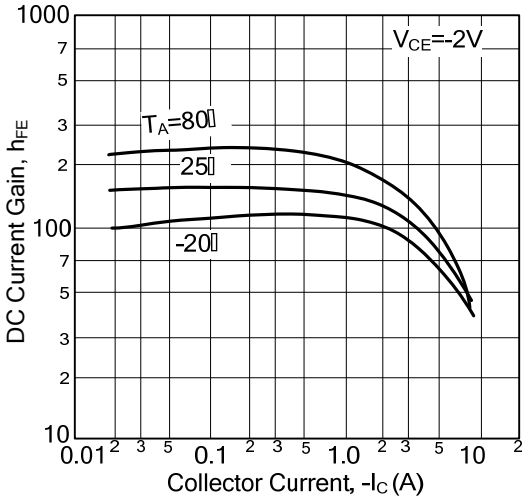
Collector Current vs. Collector-to-Emitter Voltage



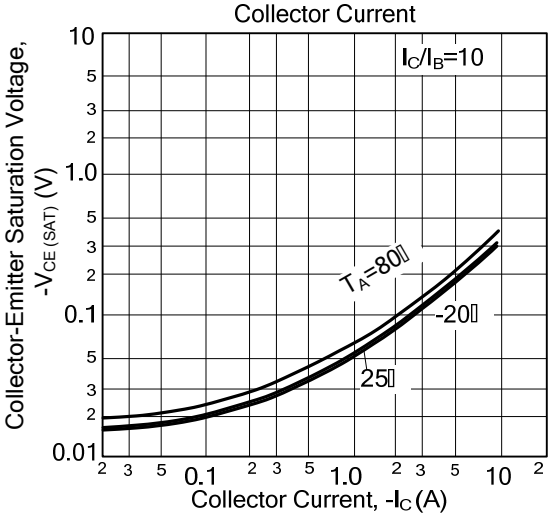
Collector Current vs. Base-to-Emitter Voltage



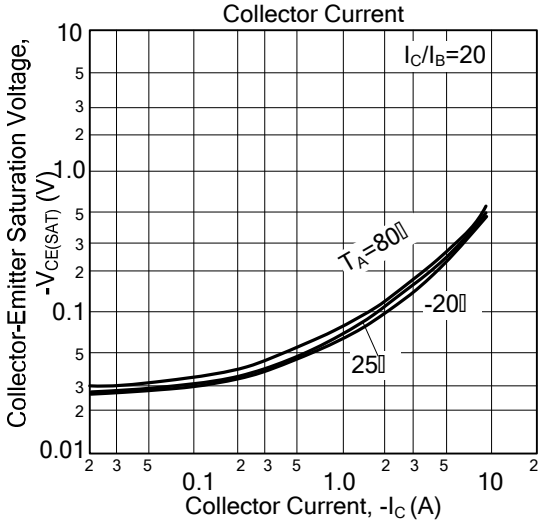
DC Current Gain vs. Collector Current



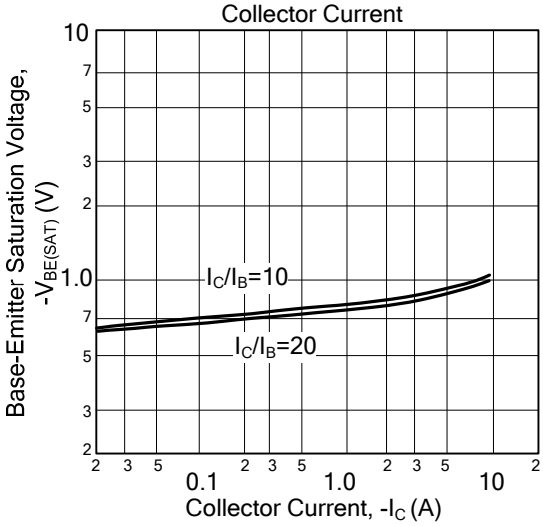
Collector-Emitter Saturation Voltage vs. Collector Current



Collector-Emitter Saturation Voltage vs. Collector Current



Base-Emitter Saturation Voltage vs. Collector Current



■ TYPICAL CHARACTERISTICS(Cont.)