



2SB824

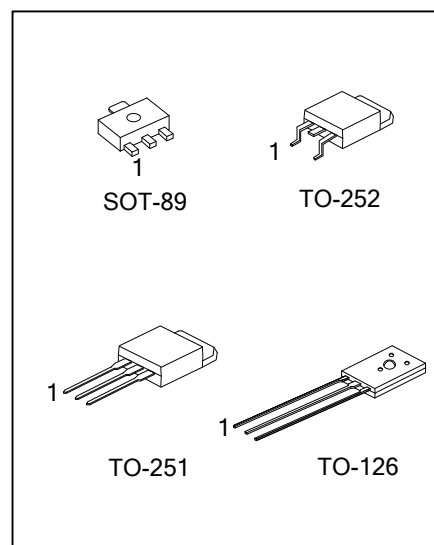
PNP SILICON TRANSISTOR

PNP PLANAR SILICON TRANSISTOR

FEATURES

* Low collector-to-emitter saturation voltage:

$$V_{CE(SAT)} = -0.4V \text{ max} / I_C = -3A, I_B = -0.3A$$



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) R: Tape Reel, K: Bulk, 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
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MARKING

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

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, 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		1	
	TO-252			
Operating Junction Temperature		T_J	-40 ~ +150	°C
Storage Temperature		T_{STG}	-55 ~ +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.

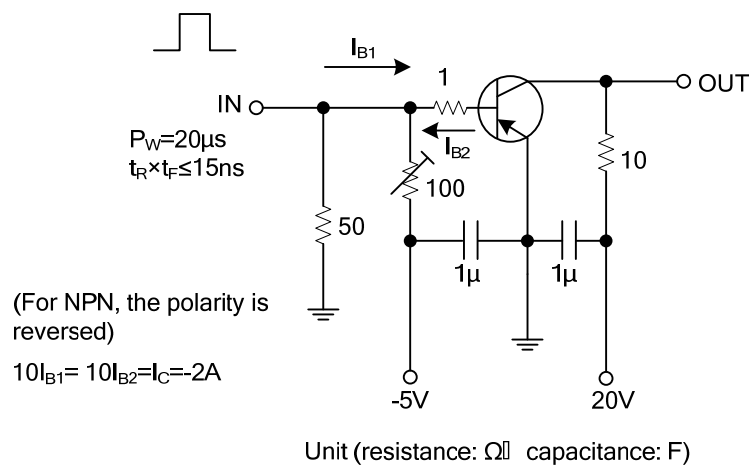
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-to-Base Breakdown Voltage	BV_{CBO}	$I_C = -1\text{mA}$, $I_E = 0$	-60			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}	$I_C = 0$, $I_E = -1\text{mA}$	-6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -40\text{V}$, $I_E = 0$			-0.1	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = -4\text{V}$, $I_C = 0$			-0.1	mA
DC Current Gain	h_{FE1}	$V_{CE} = -2\text{V}$, $I_C = -1\text{A}$	70		360	
	h_{FE2}	$V_{CE} = -2\text{V}$, $I_C = -3\text{A}$	30			
Gain Bandwidth Product	f_T	$V_{CE} = -5\text{V}$, $I_C = -1\text{A}$		30		MHZ
Output Capacitance	C_{OB}	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$		100		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -3\text{A}$, $I_B = -0.3\text{A}$			-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}

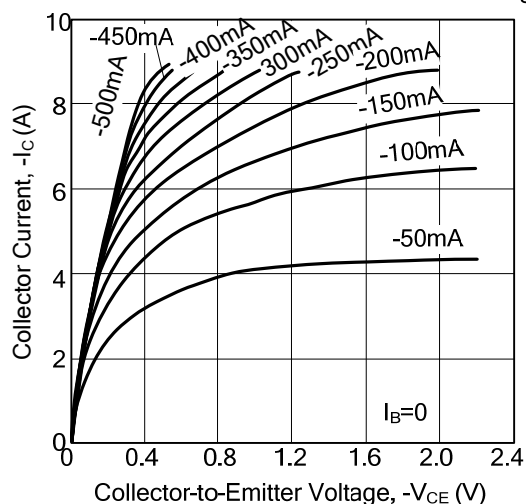
RANK	Q	R	S
RANGE	70-140	100-200	180-360

■ SWITCHING TIME TEST CIRCUIT

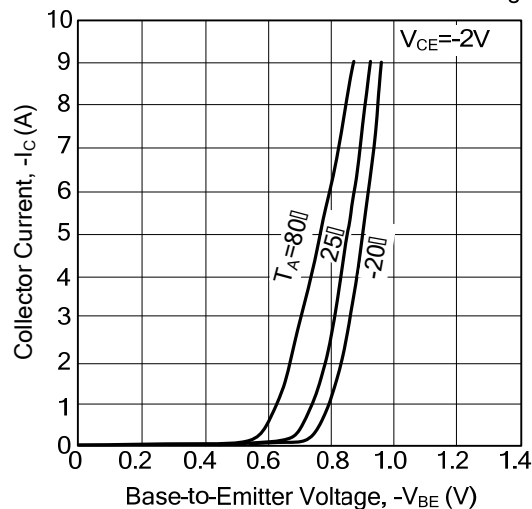


■ TYPICAL CHARACTERISTICS

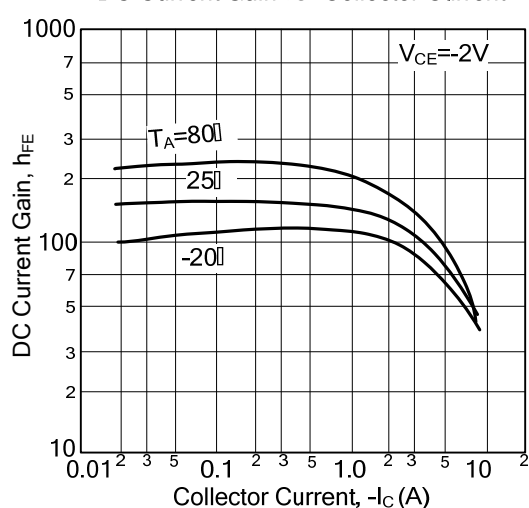
Collector Current vs. Collector-to-Emitter Voltage



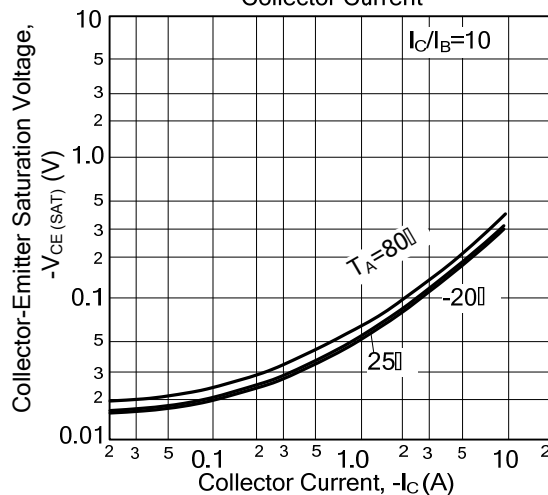
Collector Current vs. Base-to-Emitter Voltage



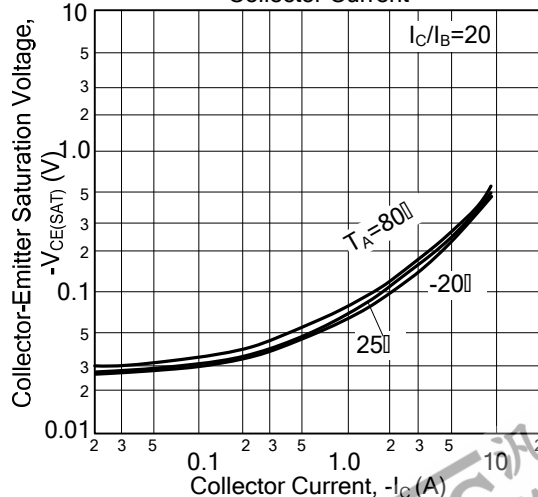
DC Current Gain vs. Collector Current



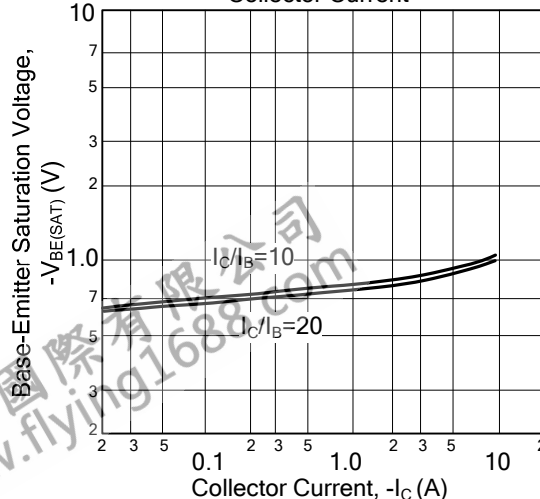
Collector-Emitter Saturation Voltage vs. Collector Current



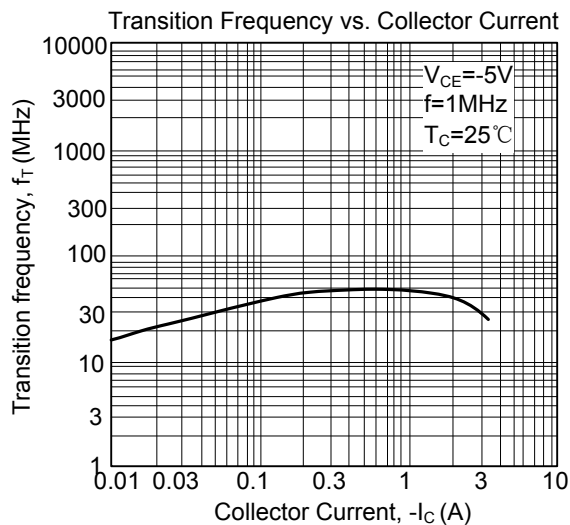
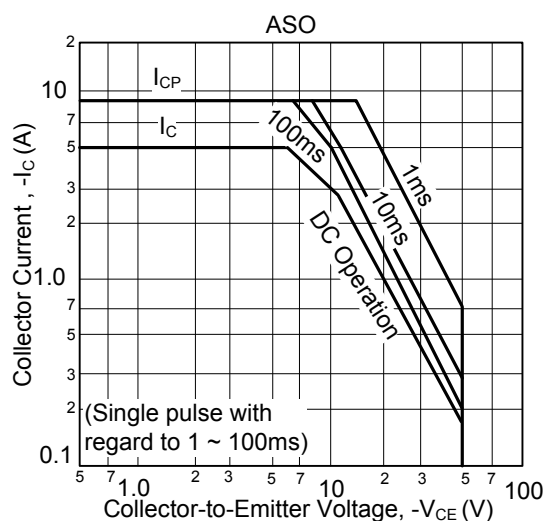
Collector-Emitter Saturation Voltage vs. Collector Current



Base-Emitter Saturation Voltage vs. Collector Current



■ TYPICAL CHARACTERISTICS (Cont.)



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