



2SD1624

NPN SILICON TRANSISTOR

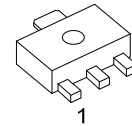
HIGH CURRENT SWITCHING APPLICATION

DESCRIPTION

The UTC **2SD1624** applies to voltage regulators, relay drivers, lamp drivers, and electrical equipment.

FEATURES

- * Adoption of FBET, MBIT processes
- * Low collector-to-emitter saturation voltage
- * Fast switching speed.
- * Large current capacity and wide ASO



SOT-89

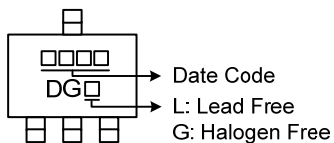
ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen-Free		1	2	3	
2SD1624L-x-AB3-R	2SD1624G-x-AB3-R	SOT-89	B	C	E	Tape Reel

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

2SD1624G-x-AB3-R (1) Packing Type (2) Package Type (3) Rank (4) Green Package	(1) R: Tape Reel (2) AB3: SOT-89 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Power Dissipation		P_C	500	mW
Collector Current	DC	I_C	3	A
	Pulse	I_{CP}	6	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 DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	250	$^{\circ}\text{C}/\text{W}$

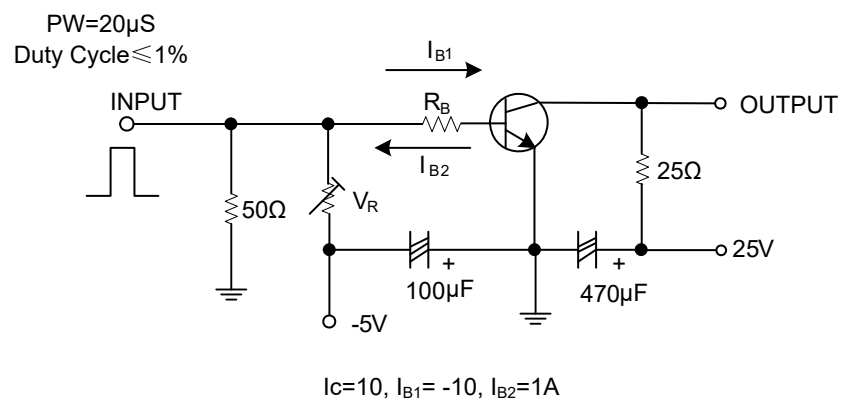
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\mu\text{A}$, $I_E=0$	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}$, $R_{BE}=\infty$	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	6			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=2\text{A}$, $I_B=100\text{mA}$		0.19	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=2\text{A}$, $I_B=100\text{mA}$		0.94	1.2	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=40\text{V}$, $I_E=0$			1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0$			1	μA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}$, $I_C=100\text{mA}$	100		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=50\text{mA}$		150		MHz
Output Capacitance	C_{OB}	$V_{CE}=10\text{V}$, $f=1\text{MHz}$		25		pF
Turn-ON Time	t_{ON}	See test circuit		70		ns
Storage Time	t_{STG}	See test circuit		650		ns
Fall Time	t_F	See test circuit		35		ns

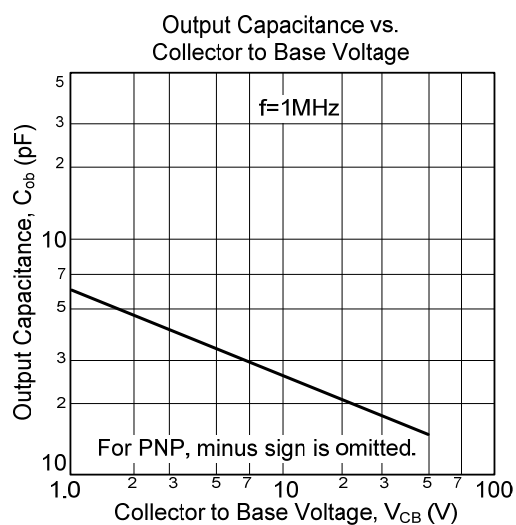
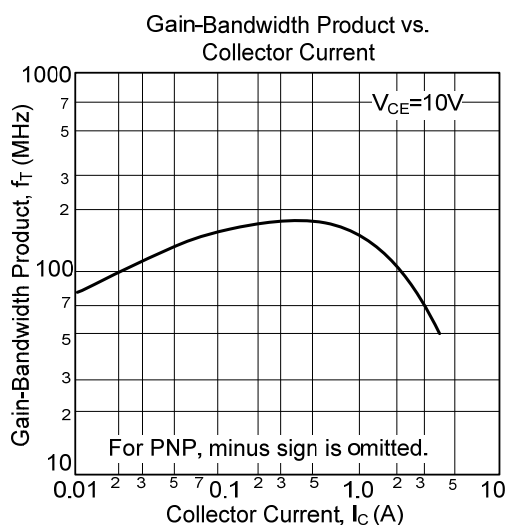
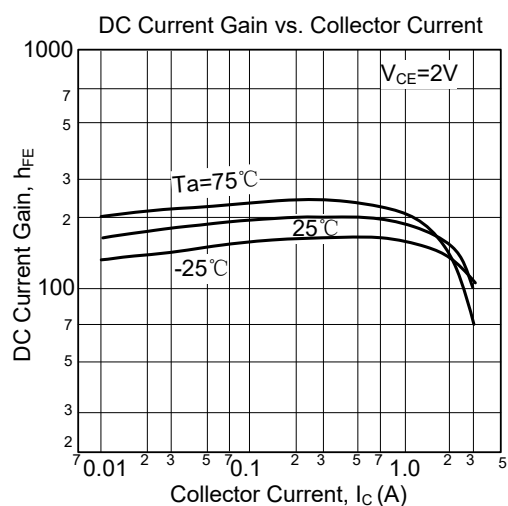
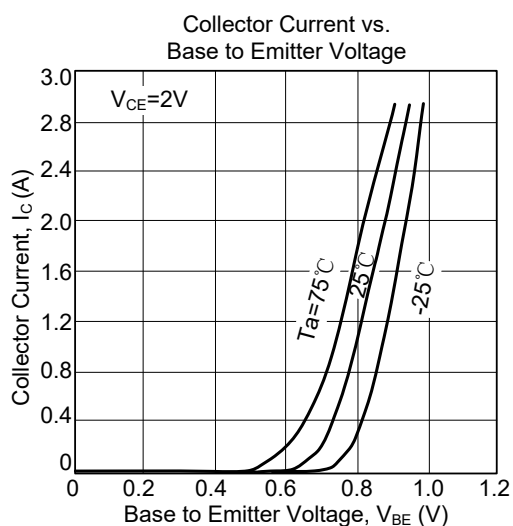
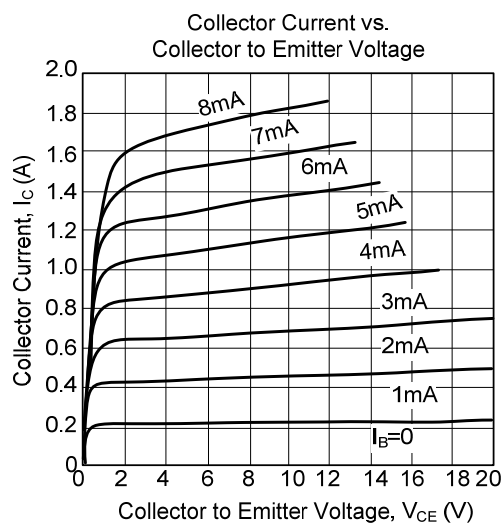
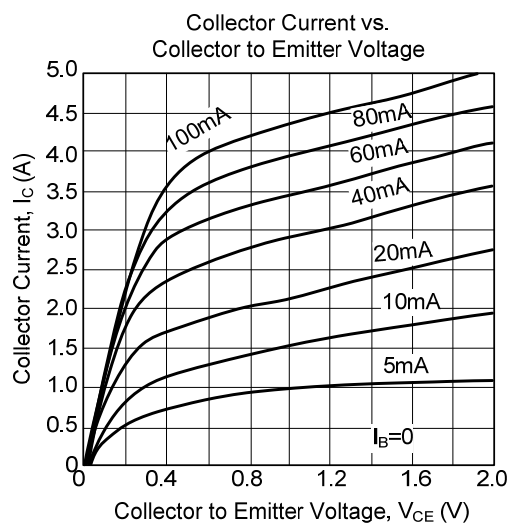
■ CLASSIFICATION OF h_{FE}

RANK	R	S	T	U
RANGE	100-200	140-280	200-400	280-560

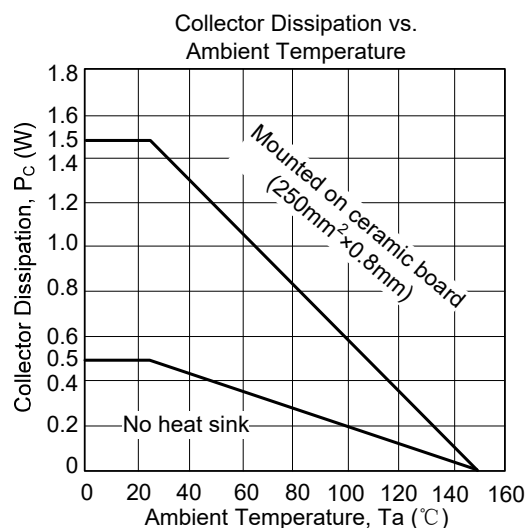
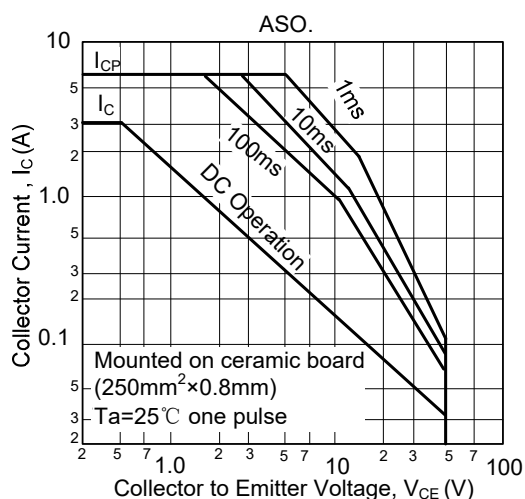
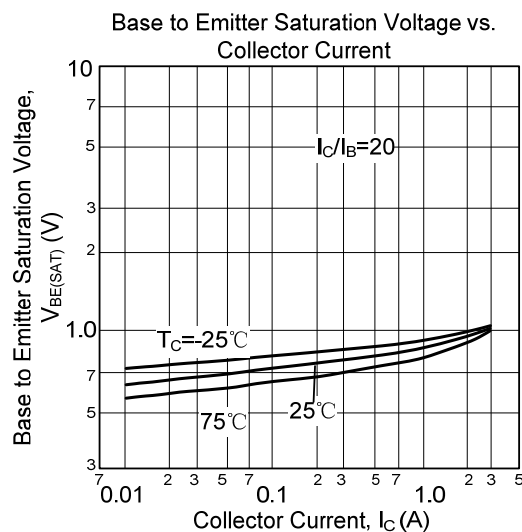
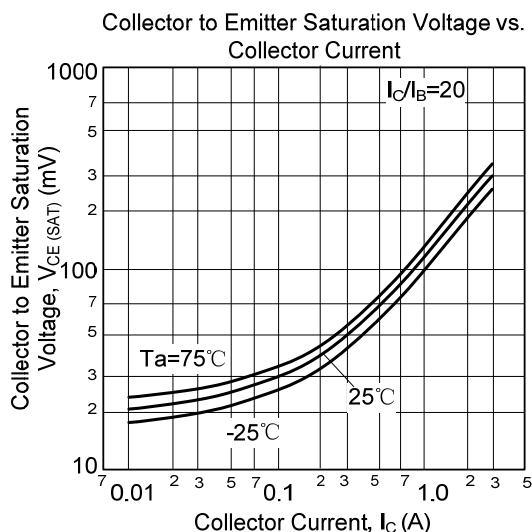
■ TEST CIRCUIT



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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