



2SA1020

PNP SILICON TRANSISTOR

SILICON PNP EPITAXIAL TRANSISTOR

DESCRIPTION

The UTC 2SA1020 is designed for power amplifier and power switching applications.

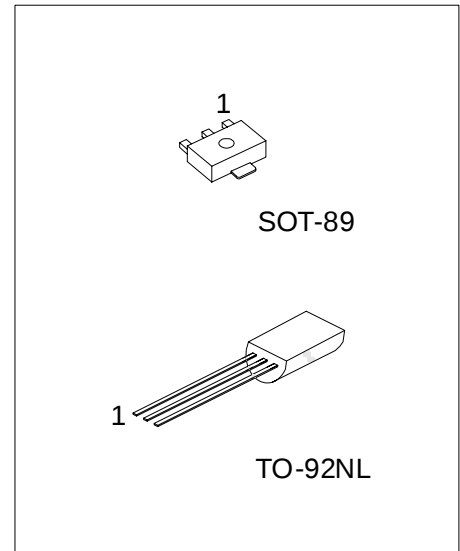
FEATURES

*Low collector saturation voltage:

$$V_{CE(SAT)} = -0.5V(\text{max.}) \quad (I_C = -1A)$$

*High speed switching time: $t_{STG} = 1.0\mu s(\text{Typ.})$

*Complement to UTC 2SC2655



*Pb-free plating product number: 2SA1020L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SA1020-x-AB3-R	2SA1020L-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SA1020-x-T9N-B	2SA1020L-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SA1020-x-T9N-K	2SA1020L-x-T9N-K	TO-92NL	E	C	B	Bulk

2SA1020L-x-AB3-R (1) Packing Type (2) Package Type (3) Rank (4) Lead Plating		(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AB3: SOT-89, T9N: TO-92NL (3) x: refer to Classification of h_{FE1} (4) L: Lead Free Plating, Blank: Pb/Sn
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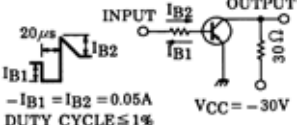
■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-50	V
Collector-Emitter Voltage		V_{CEO}	-50	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-2	A
Collector Power Dissipation	TO-92NL	P_C	900	mW
	SOT-89		500	mW
Junction Temperature		T_J	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.

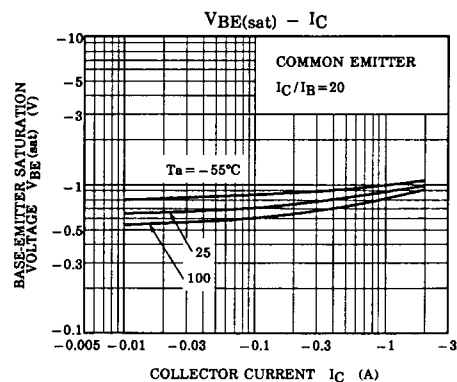
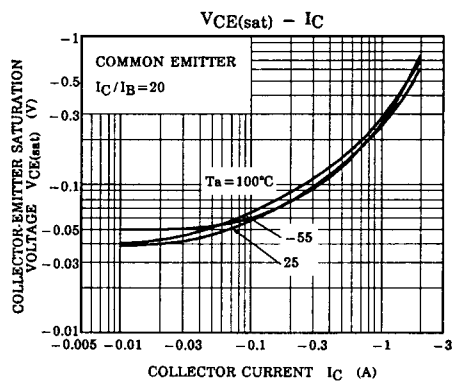
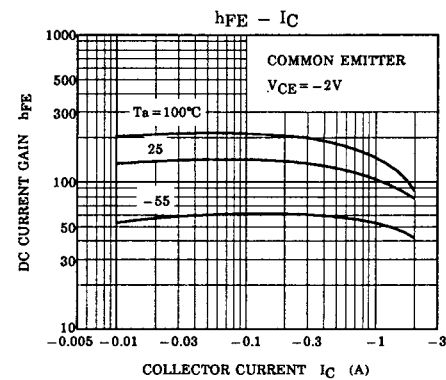
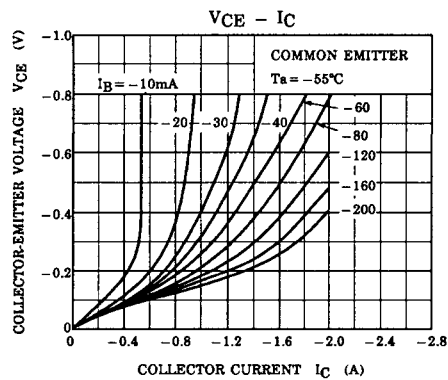
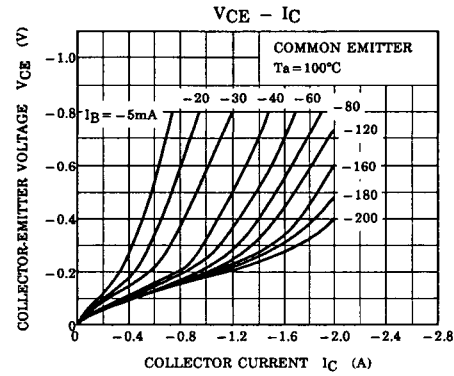
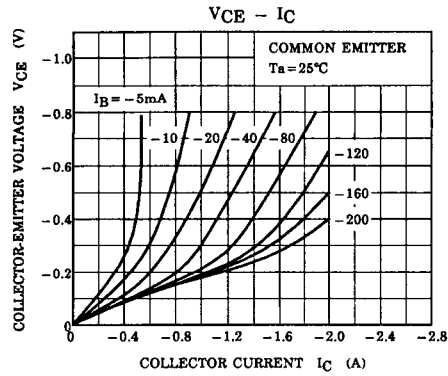
■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Emitter Breakdown Voltage		BV_{CEO}	$I_C = -10mA, I_B = 0$	-50			V
Collector Cut-off Current		I_{CBO}	$V_{CB} = -50V, I_E = 0$			-1.0	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -5V, I_C = 0$			-1.0	μA
DC Current Gain	h_{FE1}		$V_{CE} = -2V, I_C = -0.5A$	70		240	
	h_{FE2}		$V_{CE} = -2V, I_C = -1.5A$	40			
Collector to Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C = -1A, I_B = -0.05A$			-0.5	V
Base to Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C = -1A, I_B = -0.05A$			-1.2	V
Transition Frequency		f_T	$V_{CE} = -2V, I_C = -0.5A$		100		MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$		40		pF
Switching Time	Turn-on Time	t_{ON}	 20μs INPUT I_{B2} I_{B1} OUTPUT 30V - $I_{B1} = I_{B2} = 0.05A$ DUTY CYCLE $\leq 1\%$ $V_{CC} = -30V$		0.1		μs
	Storage Time	t_{STG}			1.0		μs
	Fall Time	t_F			0.1		μs

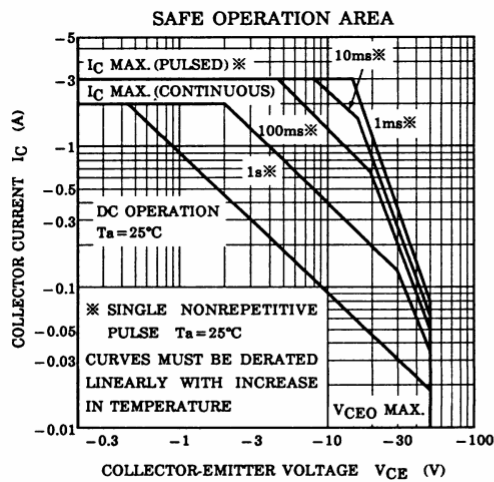
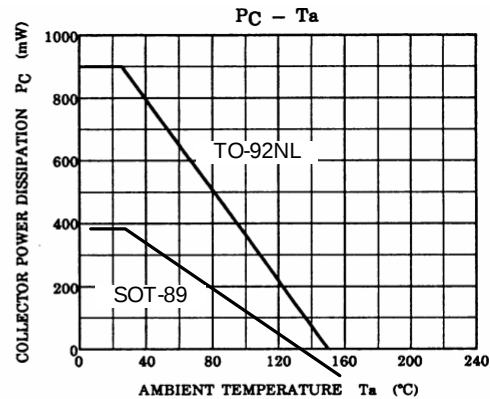
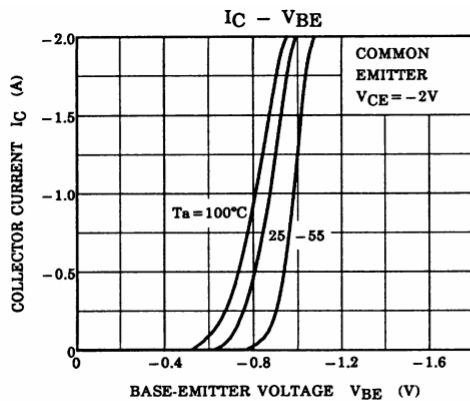
■ CLASSIFICATION OF h_{FE1}

RANK	O	Y
RANGE	70 - 140	120 - 240

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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