

PNP SILICON TRANSISTOR

DESCRIPTION

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

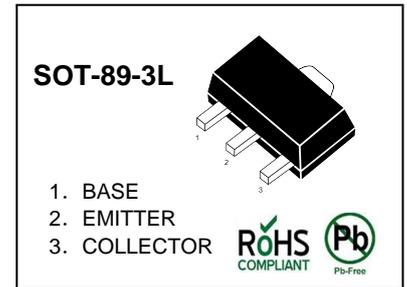
FEATURES

*Low collector saturation voltage:

$$V_{CE(SAT)} = -0.5V_{(MAX)} \quad (I_C = -1A)$$

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

*Complement to 2SC2655



MARKING : 1020

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$, 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	SOT-23	P_C	300	mW
	SOT-89		500	mW
	TO-92		900	mW
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ C$

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.

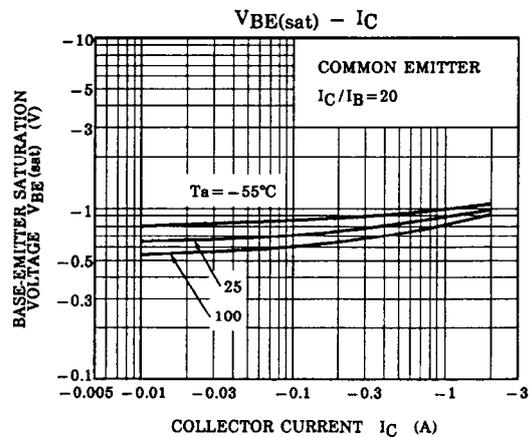
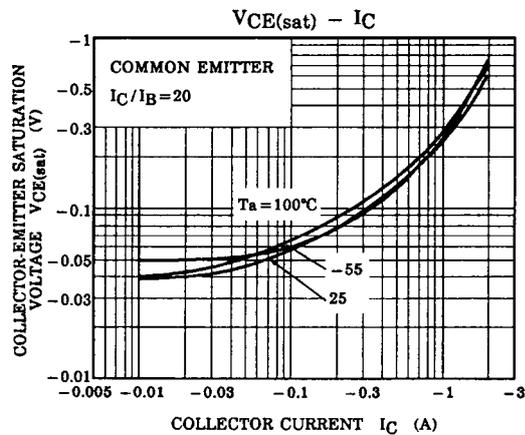
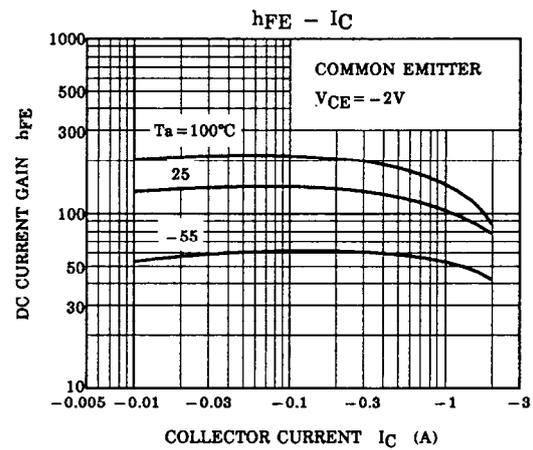
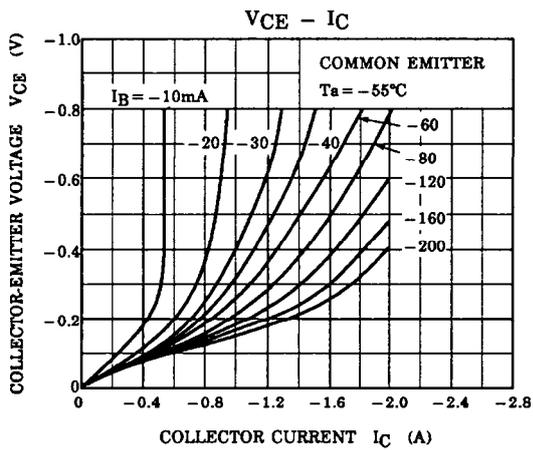
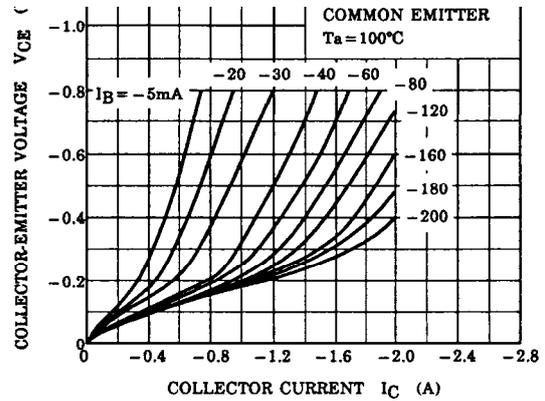
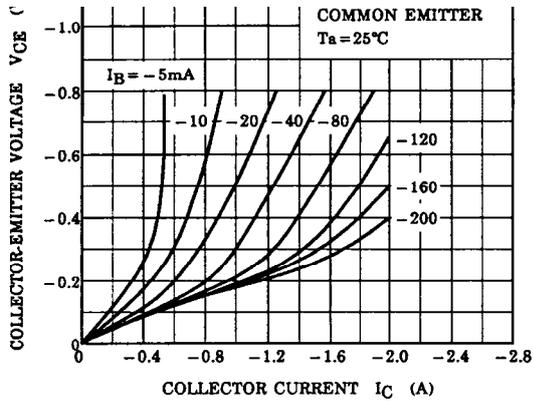
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$, unless otherwise specified)

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}			0.1		μs
	Storage Time	t_{STG}			1.0		μs
	Fall Time	t_F				0.1	

CLASSIFICATION OF h_{FE1}

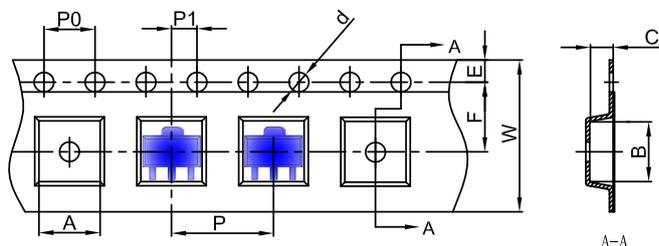
RANK	O	Y
RANGE	70 - 140	120 - 240

Typical Characteristics



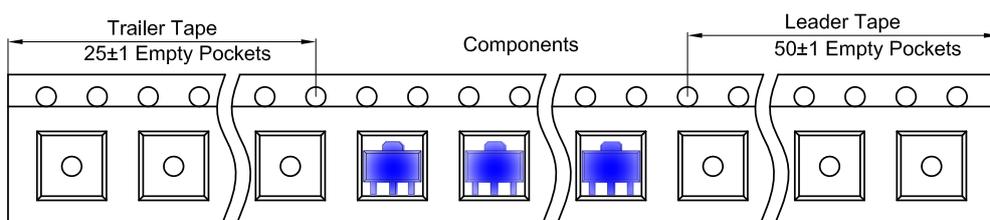
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

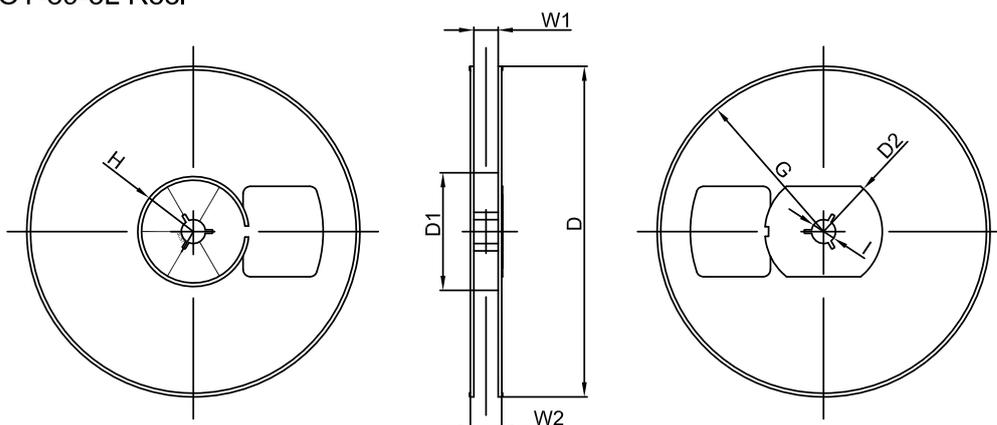


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

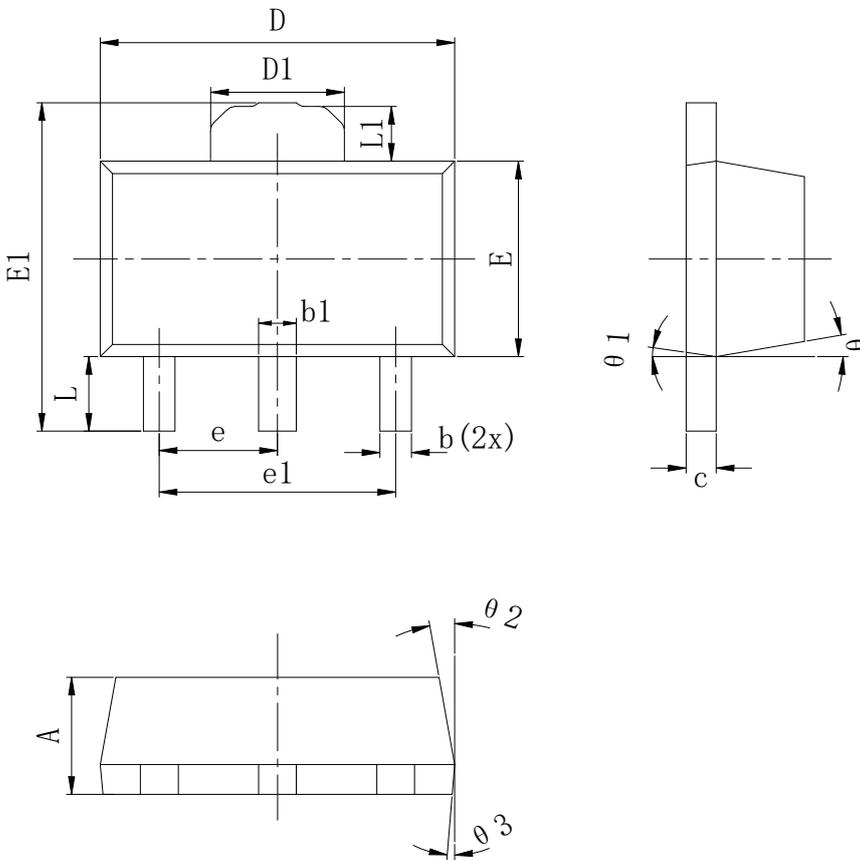


SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	



SYMBOL	MILLIMETER		
	MIN	TYP.	MAX
A	1.400	1.500	1.600
b	0.320	0.400	0.520
b1	0.400	0.480	0.580
c	0.350	0.381	0.440
D	4.400	4.500	4.600
D1	1.700REF		
E	2.400	2.500	2.600
E1	4.050	4.200	4.350
e	1.500TYP.		
e1	3.000TYP.		
L	0.800	0.950	1.200
L1	0.700REF		
theta	10° REF		
theta 1	8° REF		
theta 2	10° REF		
theta 3	5° REF		

DISCLAIMER

JHG PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with JHG products. You are solely responsible for

- (1) selecting the appropriate JHG products for your application;
- (2) designing, validating and testing your application;
- (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements.

These resources are subject to change without notice. JHG grants you permission to use these resources only for development of an application that uses the JHG products described in the resource. Other reproduction and display of these resources are prohibited. No license is granted to any other JHG intellectual property right or to any third party intellectual property right. JHG disclaims responsibility for, and you will fully indemnify JHG and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.