



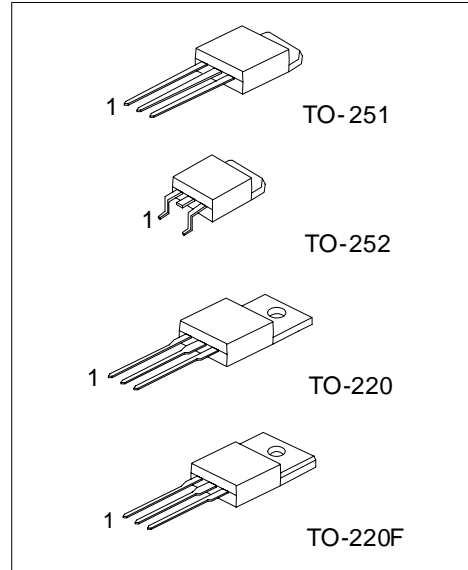
# 2SA1012

## PNP SILICON TRANSISTOR

### HIGH CURRENT SWITCHING APPLICATION

#### FEATURES

- \*Low collector saturation voltage  
 $V_{CE(SAT)} = -0.4V(\text{max.})$  at  $I_C = -3A$
- \*High speed switching time:  $t_S = 1.0\mu s(\text{Typ.})$
- \*Complementary to 2SC2562



\*Pb-free plating product number: 2SA1012L

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SA1012-x-TA3-T	2SA1012L-x-TA3-T	TO-220	B	C	E	Tube
2SA1012-x-TF3-T	2SA1012L-x-TF3-T	TO-220F	B	C	E	Tube
2SA1012-x-TM3-T	2SA1012L-x-TM3-T	TO-251	B	C	E	Tube
2SA1012-x-TN3-R	2SA1012L-x-TN3-R	TO-252	B	C	E	Tape Reel
2SA1012-x-TN3-T	2SA1012L-x-TN3-T	TO-252	B	C	E	Tube

<p>2SA1012L-x-TA3-T</p>	<p>(1) T: Tube, R: Tape Reel  (2) TA3: TO-220, TF3: TO-220F, TM3: TO-251, TN3: TO-252  (3) x: reference to Classification of <math>h_{FE1}</math>  (4) L: Lead Free Plating Blank: Pb/Sn</p>
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## PNP SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

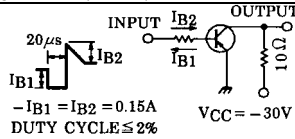
PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-60	V
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Collector-Emitter Voltage	$V_{EBO}$	-5	V
Peak Collector Current	$I_C$	-5	A
Power Dissipation	$P_D$	25	W
Junction Temperature	$T_J$	150	
Storage Temperature	$T_{STG}$	-55 ~ +150	

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.)

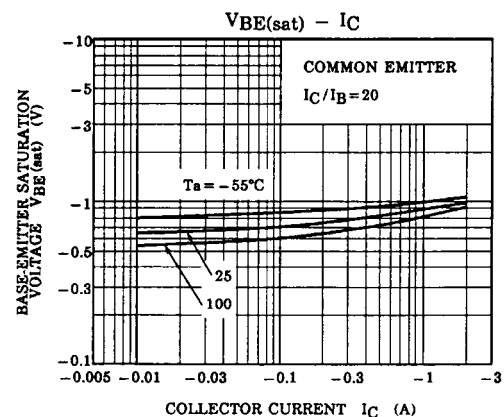
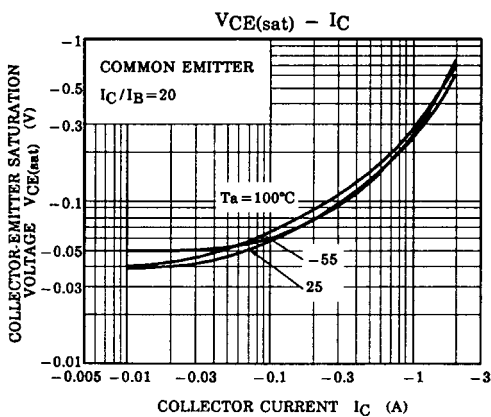
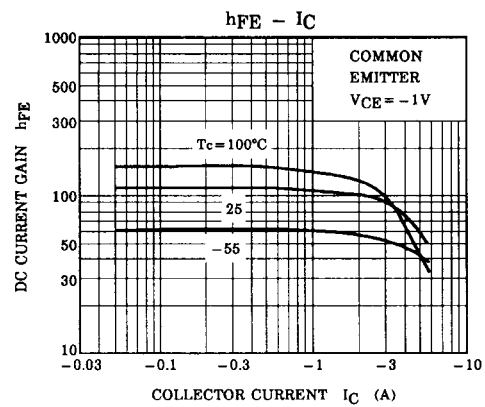
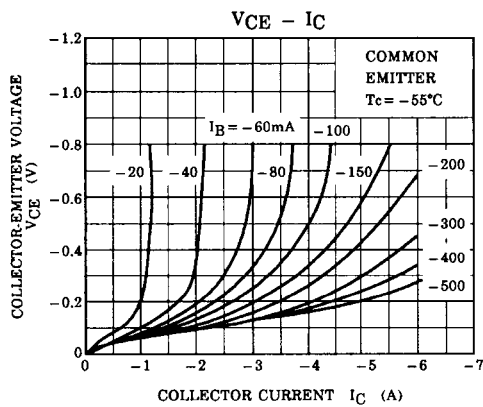
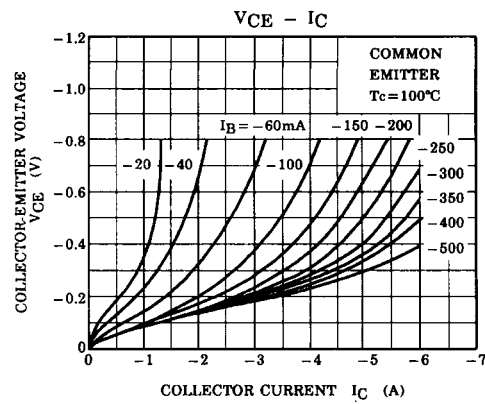
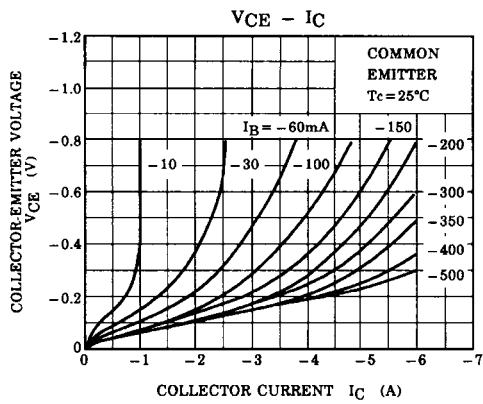
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -100\mu A, I_E = 0$	-60			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -10mA, I_B = 0$	-50			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -100\mu A, I_C = 0$	-5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -50V, I_E = 0$			-1.0	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$			-1.0	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = -1V, I_C = -1A$	70		240	
	$h_{FE2}$	$V_{CE} = -1V, I_C = -3A$	30			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -3A, I_B = -0.15A$		-0.2	-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -3A, I_B = -0.15A$		-0.9	-1.2	V
Transition frequency	$f_T$	$V_{CE} = -4V, I_C = -1A$		60		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$		170		pF
Switching time	Turn-on time	$t_{ON}$		0.1		$\mu s$
	Storage time	$t_S$		1.0		$\mu s$
	Fall time	$t_F$		0.1		$\mu s$



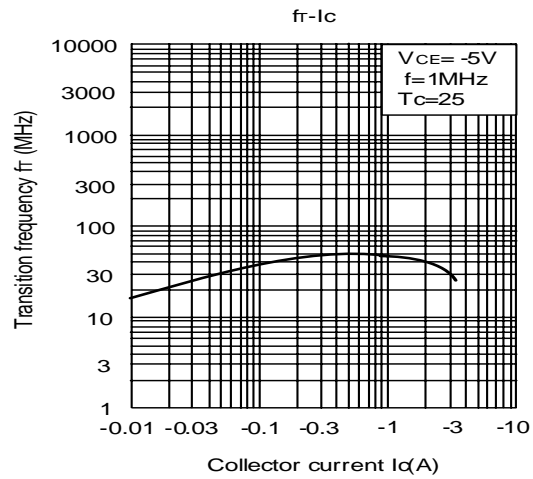
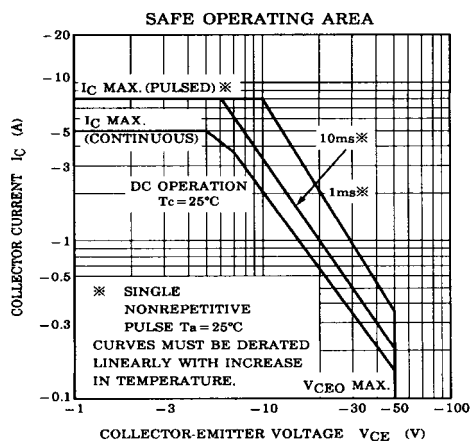
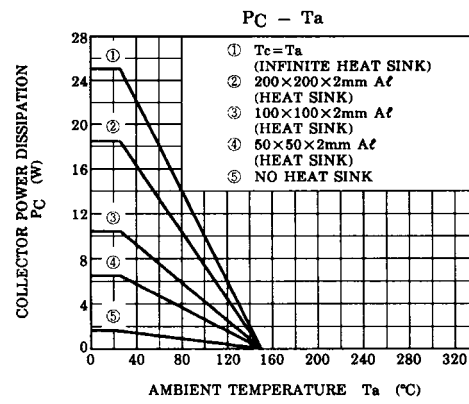
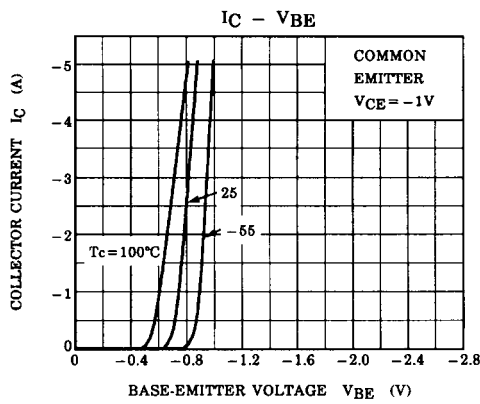
### ■ CLASSIFICATION of $h_{FE1}$

RANK	O	Y
RANGE	70 ~ 140	120 ~ 240

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS( cont.)



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