



UNISONIC TECHNOLOGIES CO., LTD

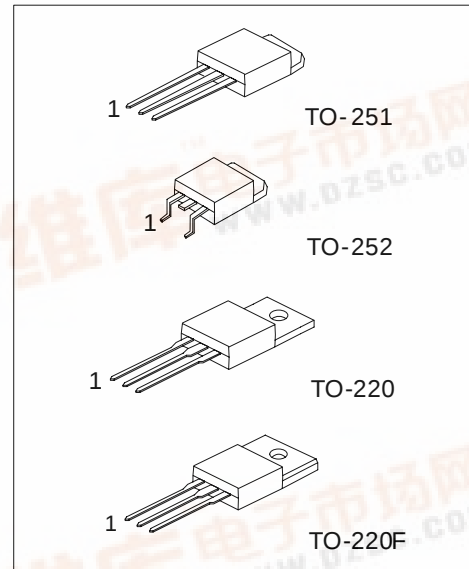
2SA1012

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

2SA1012L-x-TA3-T



- (1) Packing Type
- (2) Package Type
- (3) Rank
- (4) Lead Plating

- (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 h_{FE1}
- (4) L: Lead Free Plating Blank: Pb/Sn

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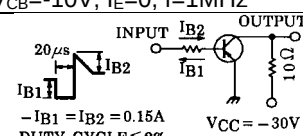
■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

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	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-1.0	μA
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	 $20\mu s$ INPUT I_{B2} I_{B1} OUTPUT I_C $-I_{B1} = I_{B2} = 0.15A$ $DUTY\ CYCLE \leq 2\%$ $V_{CC} = -30V$		0.1		μs
	Storage time			1.0		μs
	Fall time			0.1		μs

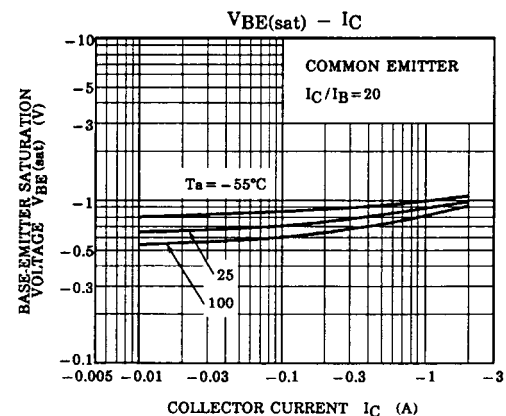
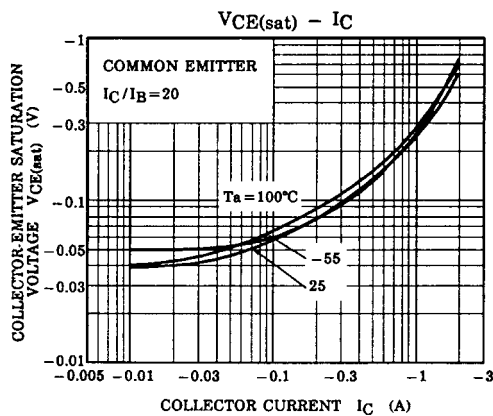
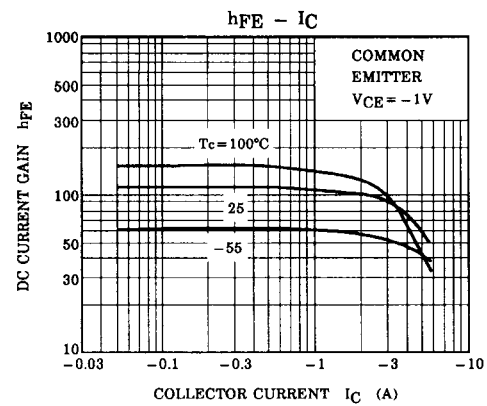
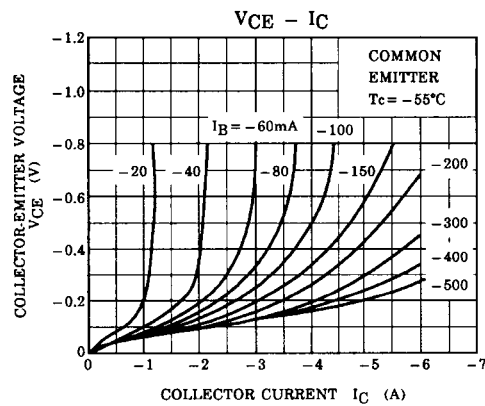
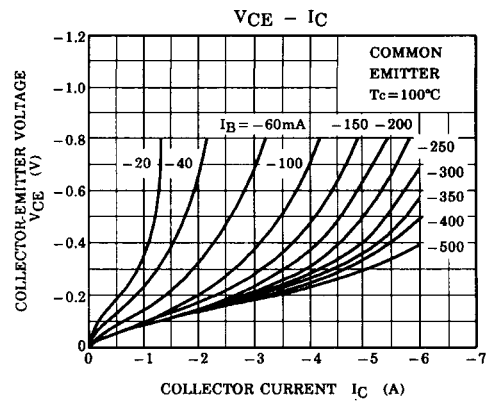
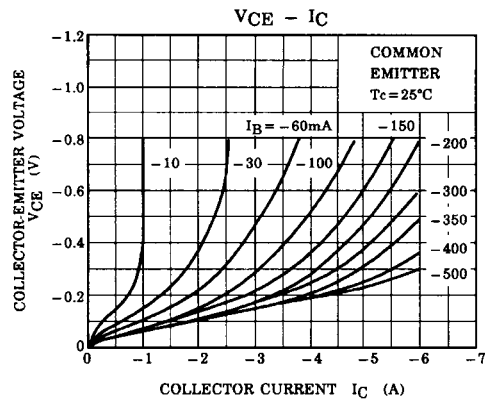
■ CLASSIFICATION of h_{FE1}

RANK	O	Y
RANGE	70 ~ 140	120 ~ 240

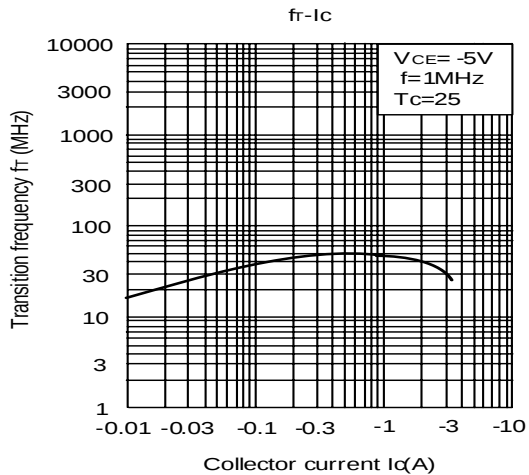
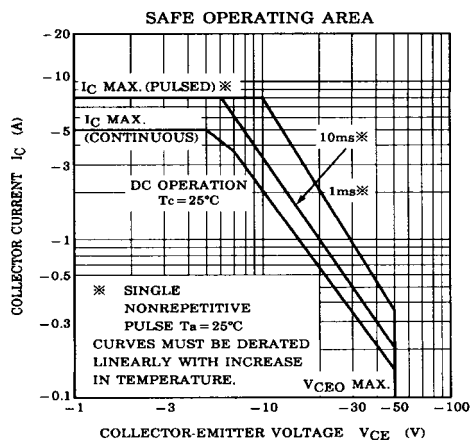
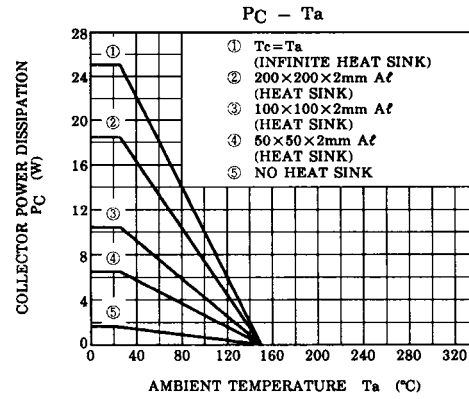
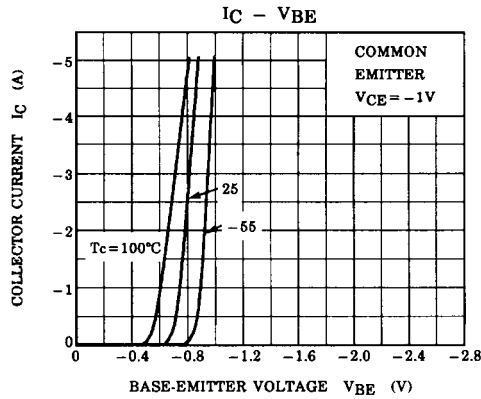
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■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(cont.)



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