



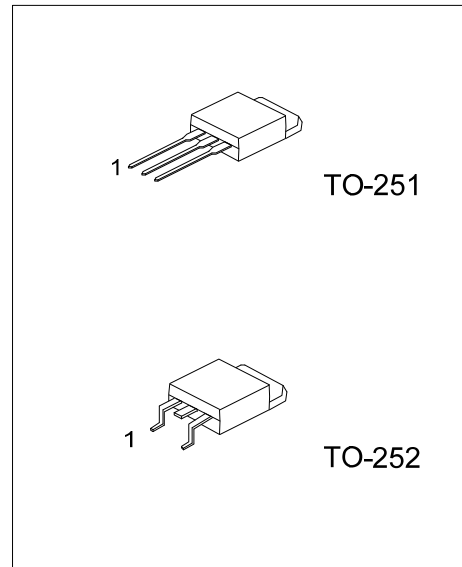
## 2SA1700

PNP EPITAXIAL SILICON TRANSISTOR

### HIGH VOLTAGE DRIVER APPLICATION

#### FEATURES

- \* High breakdown voltage.
- \* Excellent  $h_{FE}$  linearity.



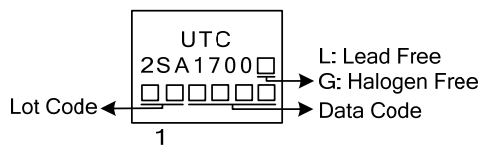
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SA1700L-x-TM3-T	2SA1700G-x-TM3-T	TO-251	B	C	E	Tube
2SA1700L-x-TN3-R	2SA1700G-x-TN3-R	TO-252	B	C	E	Tape Reel

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

<p>2SA1700L-x-TM3-T</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TM3: TO-251, TN3: TO-252</p> <p>(3) x: refer to Classification of <math>h_{FE}</math></p> <p>(4) L: Lead Free, G: Halogen Free and Lead Free</p>
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#### MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-400	V
Collector-Emitter Voltage	$V_{CEO}$	-400	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-200	mA
Collector Current (PULSE)	$I_{CP}$	-400	mA
Power Dissipation	$P_D$	1	W
		10 ( $T_C=25^\circ\text{C}$ )	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note 1. 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.

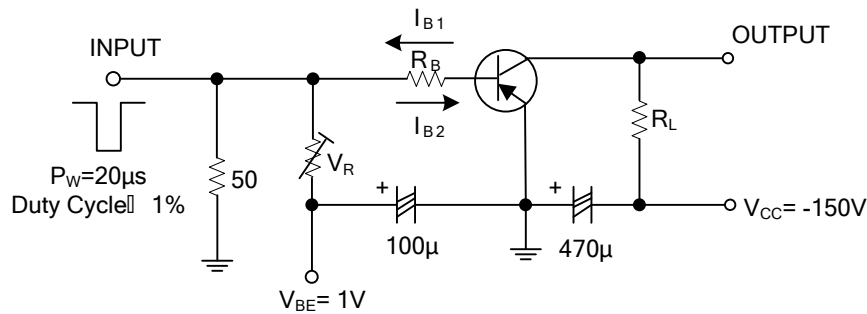
■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -10\mu\text{A}$ , $I_E = 0$	-400			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -1\text{mA}$ , $I_B = 0$ , $R_{BE} = \infty$	-400			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -10\mu\text{A}$ , $I_C = 0$	-5			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -300\text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}$ , $I_C = 0$			-0.1	$\mu\text{A}$
DC Current Transfer Ratio	$h_{FE}$	$V_{CE} = -10\text{V}$ , $I_C = -50\text{mA}$	60		200	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$			-0.8	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -50\text{mA}$ , $I_B = -5\text{mA}$			-1.0	V
Output Capacitance	$C_{OB}$	$V_{CB} = -30\text{V}$ , $f = 1\text{MHz}$		5		pF
Reverse Transfer Capacitance	$C_{RE}$	$V_{CB} = -30\text{V}$ , $f = 1\text{MHz}$		4		pF
Gain-Bandwidth Product	$f_T$	$V_{CE} = -30\text{V}$ , $I_C = -10\text{mA}$		70		MHz
Turn-on Time	$t_{ON}$	See test circuit		0.25		$\mu\text{s}$
Turn-off Time	$t_{OFF}$	See test circuit		5		$\mu\text{s}$

■ CLASSIFICATION OF  $h_{FE}$

RANK	D	E
RANGE	60-120	100-200

■ TEST CIRCUIT (Unit : (resistance :  $\Omega$ , capacitance : F))



$$-10I_{B1} = 10I_{B2} = I_C = -50\text{mA}$$

$$R_L = 3\text{k}\Omega, R_B = 200\Omega \text{ at } I_C = -50\text{mA}$$

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