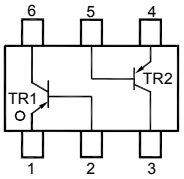
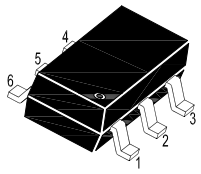
PNP Silicon Epitaxial Planar Transistor

for switching and amplifier applications





1. Emitter 2. Base 3. Collector
4. Emitter 5. Base 6. Collector

Simplified outline(SOT-363)

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	600	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

■ Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 10 V, $-I_C$ = 0.1 mA at $-V_{CE}$ = 10 V, $-I_C$ = 1 mA at $-V_{CE}$ = 10 V, $-I_C$ = 10 mA at $-V_{CE}$ = 10 V, $-I_C$ = 150 mA at $-V_{CE}$ = 10 V, $-I_C$ = 500 mA	 h_{FE} h_{FE} h_{FE} h_{FE} h_{FE}	 75 100 100 100 50	 - - - 300 -	 - - - - -
Collector Base Cutoff Current at $-V_{CB}$ = 50 V	$-I_{CBO}$	-	100	nA
Collector Emitter Cutoff Current at $-V_{CE}$ = 30 V	$-I_{CES}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 3 V	$-I_{EBO}$	-	100	nA
Collector Base Breakdown Voltage at $-I_C$ = 10 μA	$-V_{(BR)CBO}$	60	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA	$-V_{(BR)CEO}$	60	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 10 μA	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 150 mA, $-I_B$ = 15 mA at $-I_C$ = 500 mA, $-I_B$ = 50 mA	$-V_{CE(sat)}$	- -	0.4 1.6	V
Base Emitter Saturation Voltage at $-I_C$ = 150 mA, $-I_B$ = 15 mA at $-I_C$ = 500 mA, $-I_B$ = 50 mA	$-V_{BE(sat)}$	- -	1.3 2.6	V
Transition Frequency at $-V_{CE}$ = 20 V, I_E = 50 mA, f = 100 MHz	f_T	200	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 100 KHz	C_{ob}	-	8	pF
Turn-on Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_{on}	-	50	ns
Delay Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_d	-	10	ns
Rise Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA	t_r	-	40	ns
Turn-off Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA	t_{off}	-	100	ns
Storage Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA	t_{stg}	-	80	ns
Fall Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA	t_f	-	30	ns

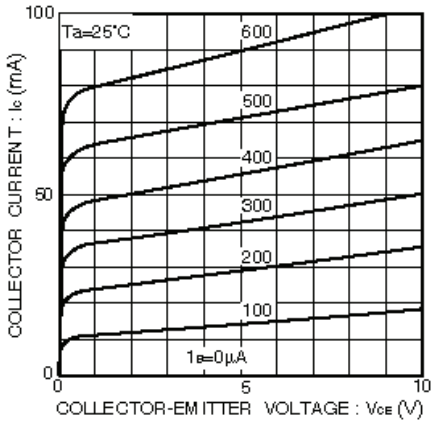


Fig.1 Grounded emitter output characteristics

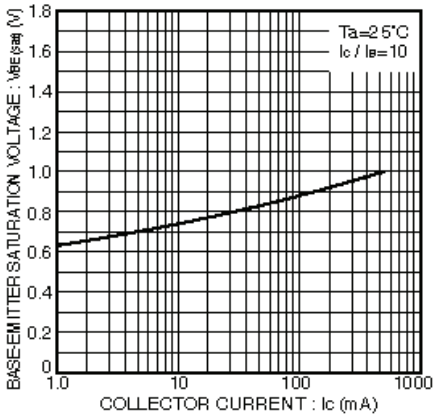


Fig.2 Base-emitter saturation voltage vs. collector current

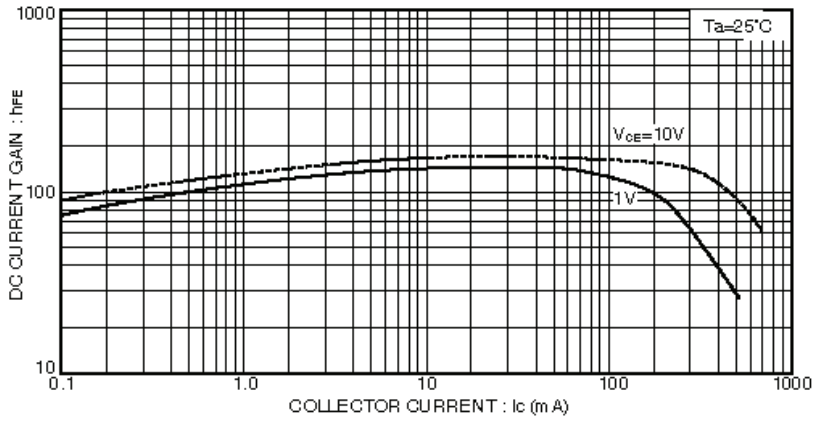


Fig.3 DC current gain vs. collector current (I)

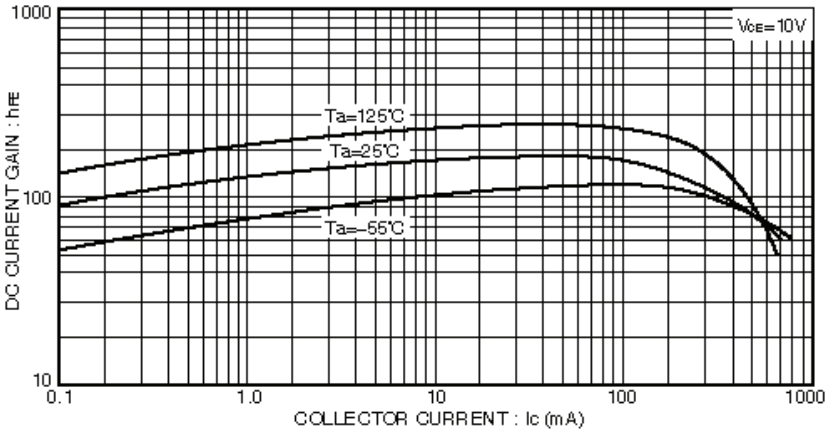


Fig.4 DC current gain vs. collector current (II)

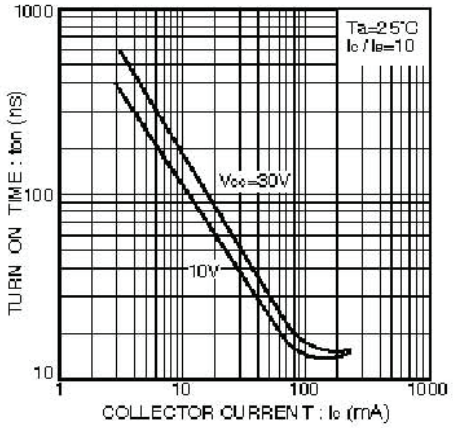


Fig.5 Turn-on time vs.collector current

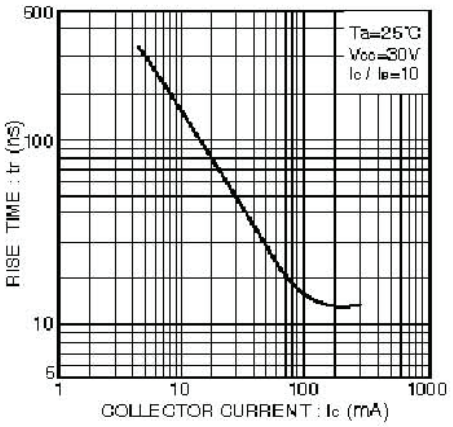


Fig.6 Rise time vs. collector current

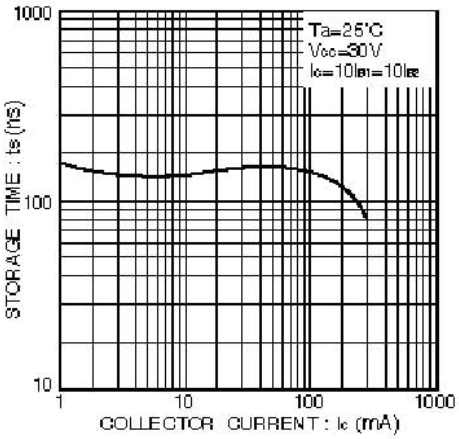


Fig.7 Storage time vs. collector current

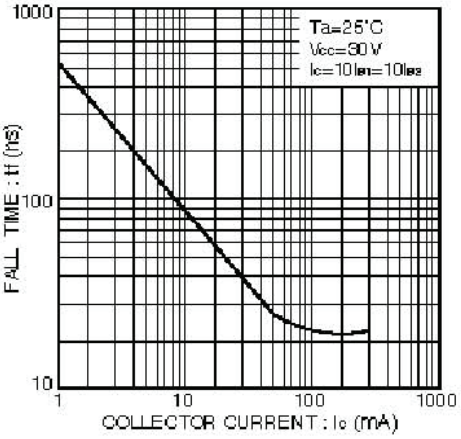


Fig.8 Fall time vs. collector current

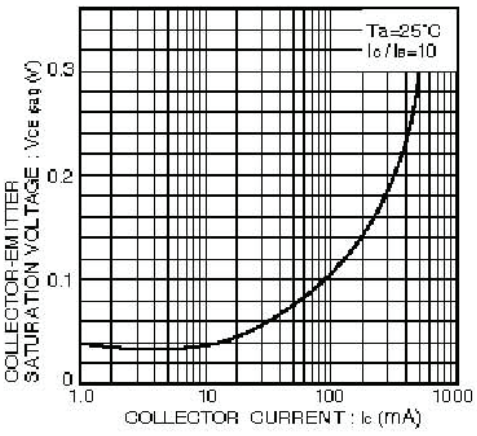


Fig.9 Collector-emitter saturation voltage vs. collector current

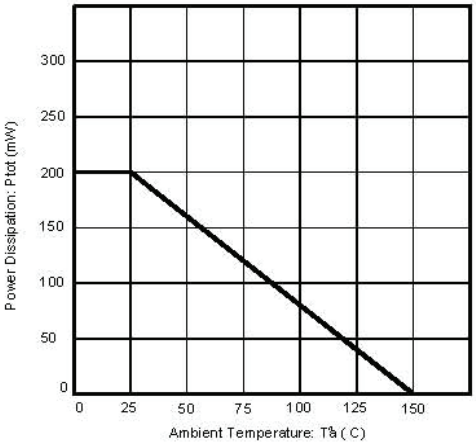
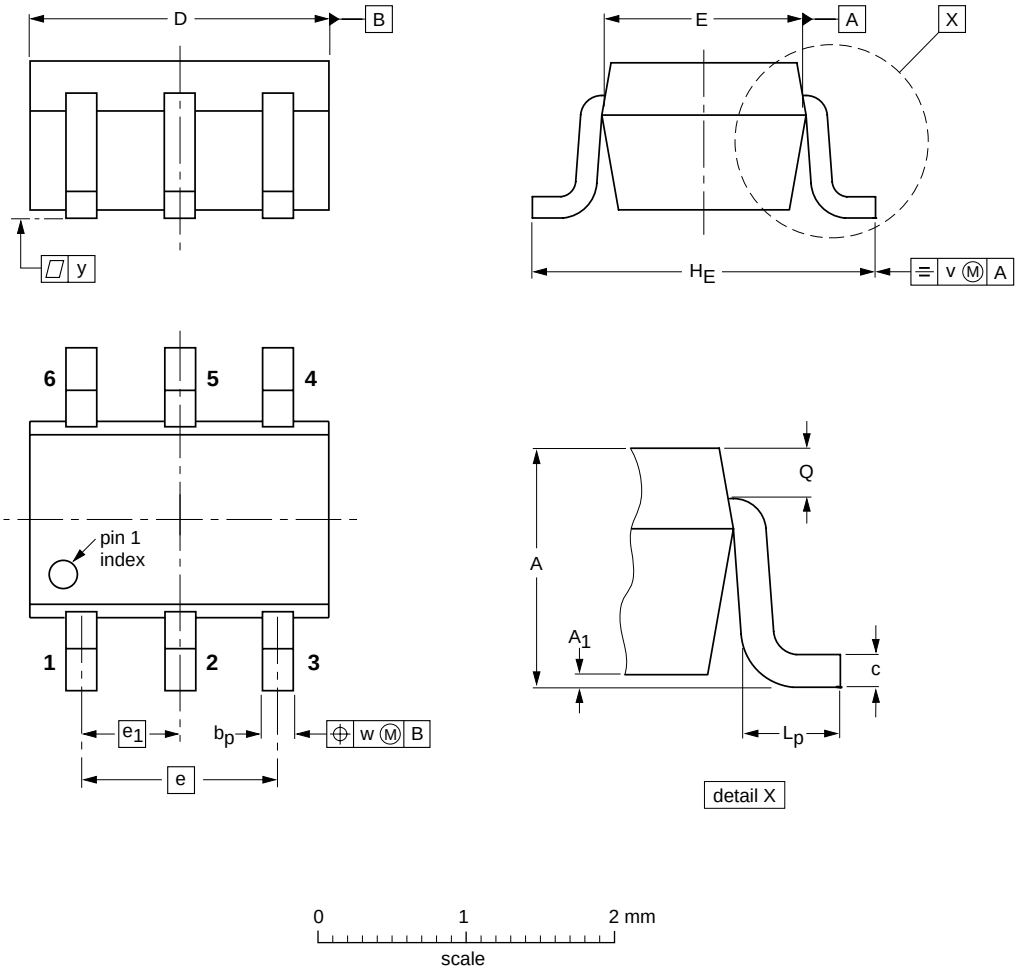


Fig.10 Power Dissipation vs Ambient Temperature

■ SOT-363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

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