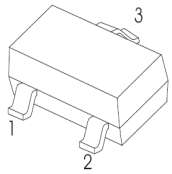
SOT-23 Plastic-Encapsulate Transistors

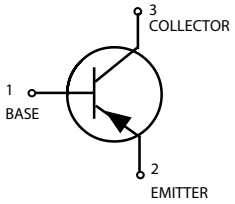
High Voltage Transistor



SOT–23

FEATURE

- High voltage.
- For Telephony or Professional communication equipment applications.
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
ATA92	2D	3000/Tape&Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	–300	Vdc
Collector–Base Voltage	V_{CBO}	–300	Vdc
Emitter–Base Voltage	V_{EBO}	–5.0	Vdc
Collector Current — Continuous	I_C	–500	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) T_A = 25°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) T_A = 25°C	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J , T_{stg}	–55 to +150	°C

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.
3. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

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ELECTRICAL CHARACTERISTICS(T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage(3) (I_C = –1.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	–300	—	Vdc
Collector–Emitter Breakdown Voltage (I_C = –100 μAdc, I_E = 0)	$V_{(BR)CBO}$	–300	—	Vdc
Emitter–Base Breakdown Voltage (I_E = –100 μAdc, I_C = 0)	$V_{(BR)EBO}$	–5.0	—	Vdc
Collector Cutoff Current (V_{CB} = –200Vdc, I_E = 0) (V_{CB} = –300Vdc, I_E = 0)	I_{CBO}	— —	–0.1 –100	μAdc
Collector Cutoff Current (V_{EB} = –6.0Vdc, I_C = 0) (V_{EB} = –5.0Vdc, I_C = 0)	I_{EBO}	— —	–0.05 –100	μAdc μAdc

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS (3)					
DC Current Gain (I_C =–1.0mAdc, V_{CE} = –10 Vdc) (I_C = –10 mAdc, V_{CE} = –10Vdc) (I_C = –30mAdc, V_{CE} =–10 Vdc)	 Both Types Both Types	h_{FE}	 25 40 25—	 — —	—
Collector–Emitter Saturation Voltage (I_C = –20mAdc, I_B = –2.0 mAdc)		$V_{CE(sat)}$	—	–0.5	Vdc
Base–Emitter Saturation Voltage (I_C = –20mAdc, I_B = –2.0 mAdc)		$V_{BE(sat)}$	—	–0.9	Vdc
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product(3),(4) (I_C = –10mAdc, V_{CE}= –20Vdc, f = 100MHz)		f_T	50	—	MHz
Collector – Base Capacitance (V_{CB} = –20 Vdc, I_E = 0, f = 1.0 MHz)		C_{cb}	—	6. 0	pF

3. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

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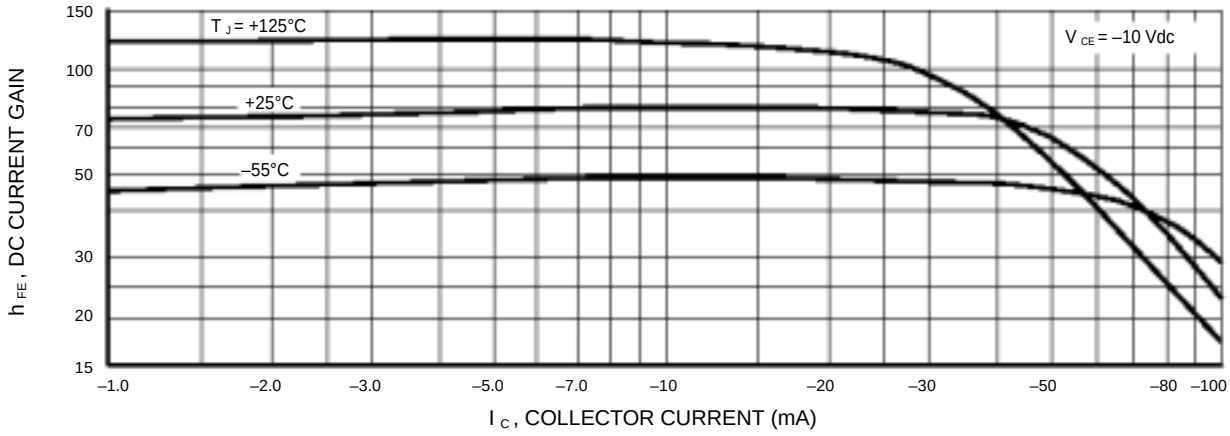


Figure 1. DC Current Gain

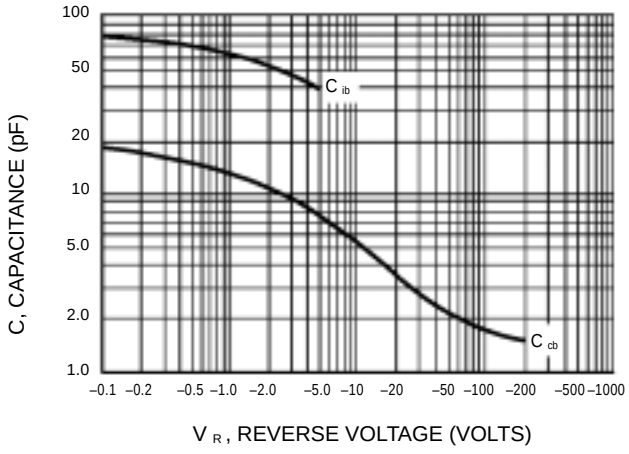


Figure 2. Capacitances

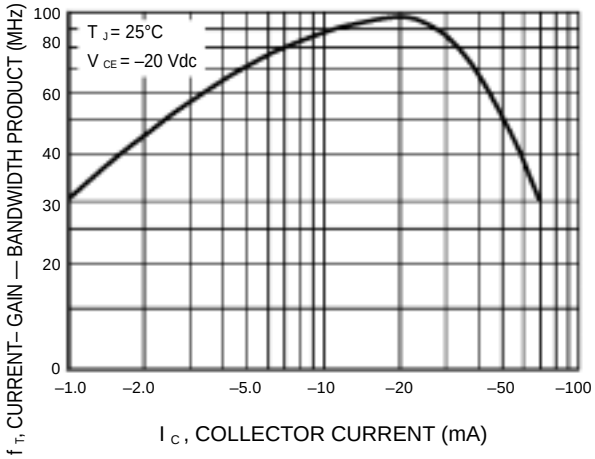


Figure 3. Current–Gain — Bandwidth Product

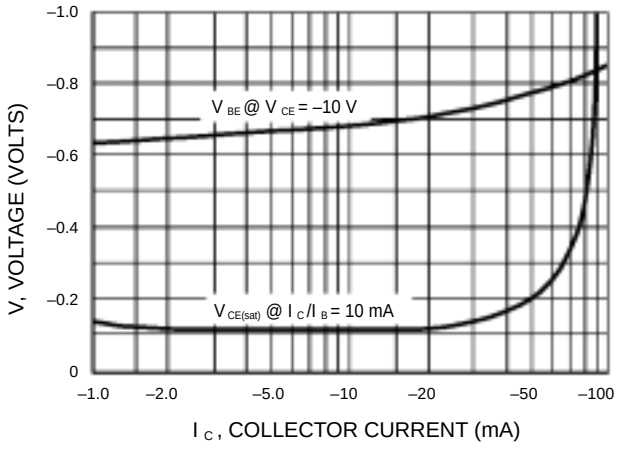
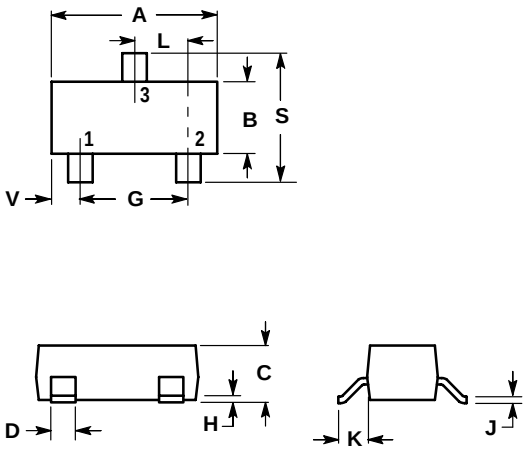


Figure 4. “On” Voltages

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NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

