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BSV52

CASE 318-02/03, STYLE 6
SOT-23 (TO-236AA/AB)

SWITCHING TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	12	Vdc
Collector-Base Voltage	V_{CBO}	20	Vdc
Emitter-Base Voltage	V_{EBO}	20	Vdc
Collector Current — Continuous	I_C	200	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T_A = 25°C Derate above 25°C	P_D	350 2.8	mW mW/°C
Storage Temperature	T_{stg}	150	°C
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	°C/W

*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc)	$V_{(BR)CEO}$	12	—	Vdc
Collector Cutoff Current (V_{CB} = 10 Vdc, I_E = 0) (V_{CB} = 10 Vdc, I_E = 0, T_A = 125°C)	I_{CBO}	— —	100 5.0	nAdc μAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = 1.0 mAdc, V_{CE} = 1.0 Vdc) (I_C = 10 mAdc, V_{CE} = 1.0 Vdc) (I_C = 50 mAdc, V_{CE} = 1.0 Vdc)	h_{FE}	25 40 25	— 120 —	—
Collector-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 300 μAdc) (I_C = 10 mAdc, I_B = 1.0 mAdc) (I_C = 50 mAdc, I_B = 5.0 mAdc)	$V_{CE(sat)}$	— — —	300 250 400	mVdc
Base-Emitter Saturation Voltage (I_C = 10 mAdc, I_B = 1.0 mAdc) (I_C = 50 mAdc, I_B = 5.0 mAdc)	$V_{BE(sat)}$	700 —	850 1200	mVdc
SMALL-SIGNAL CHARACTERISTICS				
Current-Gain — Bandwidth Product (I_C = 10 mAdc, V_{CE} = 10 Vdc)	f_T	400	—	MHz
Output Capacitance (V_{CB} = 5.0 Vdc, I_E = 0, f = 1.0 MHz)	C_{obo}	—	4.0	pF
Input Capacitance (V_{EB} = 1.0 Vdc, I_C = 0)	C_{ibo}	—	4.5	pF
SWITCHING CHARACTERISTICS				
Storage Time (I_C = I_B = I_{BM} = 10 mAdc)	t_s	—	13	ns
Turn-On Time (V_{BE} = 1.5 Vdc, I_C = 10 mAdc, I_B = 3.0 mAdc)	t_{on}	—	12	ns
Turn-Off Time (I_C = 10 mAdc, I_B = 3.0 mAdc)	t_{off}	—	18	ns