

VHF/UHF Transistors

Features

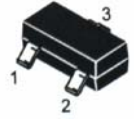
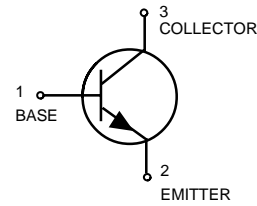
- We declare that the material of product compliance with RoHS requirements.

DEVICE MARKING

- S9018W : 3E

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	25	Vdc
Collector–Base Voltage	V_{CBO}	30	Vdc
Emitter–Base Voltage	V_{EBO}	3.0	Vdc



SOT-323

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage ($I_C = 1.0 \text{ mA dc}, I_B = 0$)	$V_{(BR)CEO}$	25	—	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 100 \mu\text{A dc}, I_E = 0$)	$V_{(BR)CBO}$	30	—	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10 \mu\text{A dc}, I_C = 0$)	$V_{(BR)EBO}$	3.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 25\text{Vdc}, I_E = 0$)	I_{CBO}	—	—	100	nA dc
Emitter Cutoff Current ($V_{EB} = 2.0\text{Vdc}, I_C = 0$)	I_{EBO}	—	—	100	nA dc

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.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
DC Current Gain ($I_C = 4.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$)	h_{FE}	60	—	270	—
Collector–Emitter Saturation Voltage ($I_C = 4.0\text{ mAdc}$, $I_B = 0.4\text{ mAdc}$)	$V_{CE(sat)}$	—	—	0.5	Vdc
Base–Emitter On Voltage ($I_C = 4.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$)	V_{BE}	—	—	0.95	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current Gain–Bandwidth Product ($V_{CE} = 10\text{ Vdc}$, $I_C = 4.0\text{ mAdc}$, $f = 100\text{ MHz}$)	f_T	650	—	—	MHz
Collector –Base Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{cb}	—	—	0.7	pF
Collector –Base Feedback Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{rb}	—	—	0.65	pF
Collector Base Time Constant ($I_C = 4.0\text{ mAdc}$, $V_{CB} = 10\text{ Vdc}$, $f = 31.8\text{ MHz}$)	$r_b' C_c$	—	—	9.0	ps