

FAIRCHILD

A Schumberger Company

2N5227/FTSO5227

PNP Small Signal General Purpose Amplifier & Oscillator

T-29.23

- $V_{CEO} \dots 30 \text{ V (Min)}$
- $I_{FE} \dots 50\text{-}700 \text{ @ } 2.0 \text{ mA}$
- $f_T \dots 100 \text{ MHz (Min) @ } 10 \text{ mA}$
- $C_{cb} \dots 5.0 \text{ pF (Max)}$
- Complements ... 2N5223

PACKAGES

- 2N5227 TO-82
- FTSO5227 TO-236AA/AB

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature $-55^\circ \text{C to } 150^\circ \text{C}$
 Operating Junction Temperature 150°C

Power Dissipation (Notes 2 & 3)

Total Dissipation at	2N	FTSO
25° C Ambient Temperature	0.625 W	0.350 W*
25° C Case Temperature	1.0 W	

Voltages & Currents

V_{CEO} Collector to Emitter Voltage	-30 V
(Note 4)	
V_{CBO} Collector to Base Voltage	-30 V
V_{EBO} Emitter to Base Voltage	-3.0 V
I_C Collector Current	50 mA

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 6)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV_{CEO}	Collector to Emitter Breakdown Voltage	-30		V	$I_C = 1.0 \text{ mA}, I_E = 0$
BV_{CBO}	Collector to Base Breakdown Voltage	-30		V	$I_C = 100 \mu\text{A}, I_E = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	-3.0		V	$I_E = 100 \mu\text{A}, I_C = 0$
I_{EBO}	Emitter Cutoff Current		500	nA	$V_{EB} = -2.0 \text{ V}, I_C = 0$
I_{CBO}	Collector Cutoff Current		100	nA	$V_{CB} = -10 \text{ V}, I_E = 0$
h_{FE}	DC Current Gain (Note 5)	30 50	700		$I_C = 100 \mu\text{A}, V_{CE} = -10 \text{ V}$ $I_C = 2.0 \text{ mA}, V_{CE} = -10 \text{ V}$
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage		-0.4	V	$I_C = 10 \text{ mA}, I_E = 1.0 \text{ mA}$
$V_{BE(sat)}$	Base to Emitter Saturation Voltage		-1.0	V	$I_C = 10 \text{ mA}, I_E = 1.0 \text{ mA}$
C_{cb}	Collector to Base Capacitance		5.0	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$
h_{fe}	Small Signal Current Gain	50	1500		$I_C = 2.0 \text{ mA}, V_{CE} = -10 \text{ V}, f = 1.0 \text{ kHz}$
f_T	Current Gain Bandwidth Product	100		MHz	$I_C = 10 \text{ mA}, V_{CE} = -10 \text{ V}, f = 100 \text{ MHz}$

NOTES:

1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings give a maximum junction temperature of 150° C and (TO-82) junction-to-case thermal resistance of 125° C/W (derating factor of 8.0 mW/°C); junction-to-ambient thermal resistance of 200° C/W (derating factor of 5.0 mW/°C); (TO-236) junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/°C).
4. Rating refers to a high current point where collector to emitter voltage is lowest.
5. Pulse conditions: length = 300 μs ; duty cycle = 1%.
6. For product family characteristic curves, refer to Curve Set T215.
- * Package mounted on 99.5% alumina 8 mm x 8 mm x 0.6 mm.