

FEATURES

- HIGH FREQUENCY — $f_T = 1.3$ GHz Min.
- HIGH h_{FE} @ $I_C = 10$ mA — 100 Min., 180 Typ., 300 Max.
- LOW $V_{CE(sat)}$ @ $I_C = 10$ mA — 50 mV Typ., 150 mV Max.
- LOW C_{obo} @ $V_{CB} = 10$ V — 2.0 pF Max.
- LOW C_{ibo} @ $V_{EB} = 0.5$ V — 4.0 pF Max.
- GUARANTEED PERFORMANCE AFTER FAST NEUTRON DOSE (10^{15} nvt)

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures (Note 1)

- Storage Temperature
- Operating Junction Temperature
- Lead Temperature (Soldering, 10 seconds Time Limit)

-55°C to +200°C
+200°C Maximum
+300°C Maximum

Maximum Voltages (Note 1)

- V_{CBO} Collector to Base Voltage
- V_{CEO} Collector to Emitter Voltage
- V_{EBO} Emitter to Base Voltage

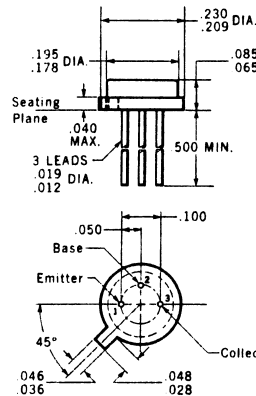
15 Volts
10 Volts
4.5 Volts

Maximum Power Dissipation (Note 2 and 3)

- Total Dissipation at
- 25°C Case Temperature
- 25°C Ambient Temperature

1.3 Watts
0.25 Watt

PHYSICAL DIMENSIONS
in accordance with
JEDEC (TO-46) outline



NOTES: All dimensions in inches.
Leads are gold-plated lower.
Collector internally connected to case.
Package weight is 0.36 gram.

ELECTRICAL CHARACTERISTICS (25°C Free Air Temperature unless otherwise noted)

SYMBOL	CHARACTERISTICS	PRE-IRRADIATION			POST-IRRADIATION			UNITS	TEST CONDITIONS	
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.			
$V_{CE0(sust)}$	Collector to Emitter Sustaining Voltage (Note 4 and 6)	10	12		10	20		Volts	$I_C = 10$ mA (pulsed)	$I_B = 0$
BV_{CES}	Collector to Emitter Breakdown Voltage	15	23		15	25		Volts	$I_C = 1.0$ mA	$I_B = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	4.5	5.5		4.5	5.6		Volts	$I_C = 0$	$I_E = 1.0$ mA
h_{FE}	DC Pulse Current Gain (Note 4)	32	78		5.0	7.0			$I_C = 100$ μ A	$V_{CE} = 5.0$ V
h_{FE}	DC Pulse Current Gain (Note 4)	62	124		9.0	12			$I_C = 1.0$ mA	$V_{CE} = 5.0$ V
h_{FE}	DC Pulse Current Gain (Note 4)	100	180	300	15	20			$I_C = 10$ mA	$V_{CE} = 5.0$ V
h_{FE}	DC Pulse Current Gain (Note 4)	94	170		14	17			$I_C = 100$ mA	$V_{CE} = 5.0$ V
$h_{FE} (-55^\circ\text{C})$	DC Pulse Current Gain (Note 4)	50	90		8.0	12			$I_C = 10$ mA	$V_{CE} = 5.0$ V
$V_{CE(sat)}$	Pulsed Collector Saturation Voltage (Note 4)		0.05	0.15		0.18	0.25	Volts	$I_C = 10$ mA	$I_B = 1.0$ mA
$V_{BE(sat)}$	Pulsed Base Saturation Voltage (Note 4)		0.80	0.90		0.80	0.90	Volts	$I_C = 10$ mA	$I_B = 1.0$ mA
h_{fe}	High Frequency Current Gain ($f = 100$ MHz)	13	15		10	13			$I_C = 10$ mA	$V_{CE} = 5.0$ V
C_{obo}	Common Base, Open Circuit Output Capacitance			2.0			2.0	pF	$I_E = 0$	$V_{CB} = 10$ V
C_{ibo}	Common Base, Open Circuit Input Capacitance			4.0			4.0	pF	$I_C = 0$	$V_{EB} = 0.5$ V
I_{CBO}	Collector Cutoff Current		0.005	1.0		0.1	10.0	μ A	$I_E = 0$	$V_{CB} = 10$ V
$I_{CBO}(150^\circ\text{C})$	Collector Cutoff Current			10			10	μ A	$I_E = 0$	$V_{CB} = 10$ V
t_{on}	Turn On Time (see Figure 1)			13		20		ns	$I_C = 10$ mA	$I_{B1} = 1.0$ mA
t_{off}	Turn Off Time (see Figure 1)			49		60		ns	$I_C = 10$ mA	$I_{B1} = 1.0$ mA $I_{B2} = 1.0$ mA
τ_s	Charge Storage Time (see Figure 2)			60		80		ns	$I_C = 10$ mA	$I_{B1} = 10$ mA $I_{B2} = 10$ mA



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TYPICAL ELECTRICAL CHARACTERISTICS

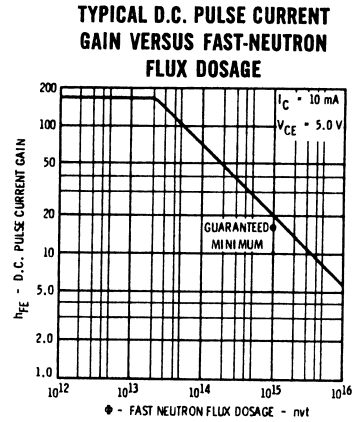
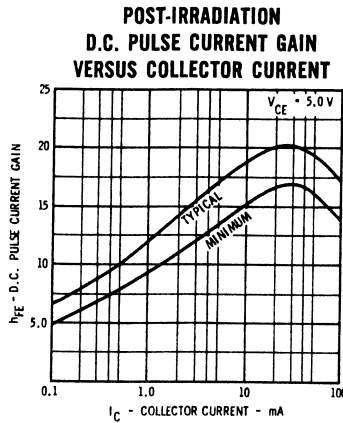
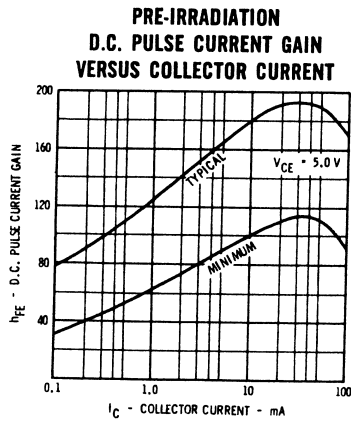


FIGURE 1

FIGURE 2

