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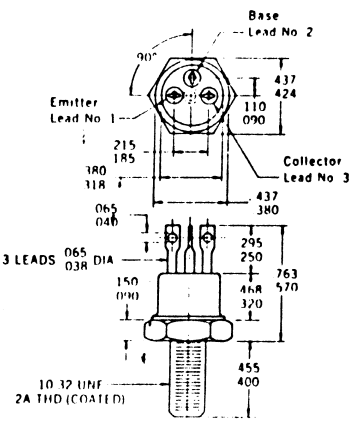
- **HIGH POWER** . . . . . 30 WATTS AT $T_C = 50°C$, $V_{CE} = -40$ V
- **HIGH VOLTAGE** . . . . . —80 V (MIN) LV_{CEO}
- **HIGH CURRENT SATURATION VOLTAGE** . . . —0.85 V (MAX) $V_{CE(sat)}$ AT $I_C = 2.0$ A
- **HIGH FREQUENCY** . . . . . 50 AND 60 MHz (MIN) f_T
- **BETA GUARANTEED AT 3 POINTS** . . . . . 50 mA, 1.0 A AND 2.0 A
- **ISOLATED COLLECTOR PACKAGE** . . . . . NO ISOLATING HARDWARE REQUIRED
- **DISCRETE EMITTER GEOMETRY WITH INTEGRATED FEEDBACK RESISTORS**

PHYSICAL DIMENSIONS
(in accordance ith JEDEC TO-59 outline)



NOTES:
All dimensions in inches
All leads electrically isolated from case
Package weight is 6.44 grams

ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures		
Storage Temperature		—65°C to +200°C
Operating Junction Temperature		—65°C to +200°C
Lead Temperature (Soldering, 60 second time limit)		+300°C
Maximum Power Dissipation		
Total Dissipation at 50°C Case Temperature, $V_{CE} = -40$ V (See Maximum Permissible Power Curve and Note 4)		30 Watts
Maximum Voltages and Current		
V_{CES}	Collector to Emitter Voltage	—100 Volts
V_{CEO}	Collector to Emitter Voltage (Note 2)	—80 Volts
V_{EBO}	Emitter to Base Voltage	—5.5 Volts
I_C	Collector Current	2.0 Amps

ELECTRICAL CHARACTERISTICS (25°C Case Temperature unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS	
$V_{CEO(sus)}$	**Collector to Emitter Sustaining Voltage** (Notes 2 and 3)	**—80**			**Volts**	$I_C = 100$ mA	$I_B = 0$
BV_{CES}	Collector to Emitter Breakdown Voltage	—100			Volts	$I_C = 1.0$ mA	$V_{BE} = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	—5.5			Volts	$I_C = 0$	$I_E = 1.0$ mA
h_{FE}	**DC Pulse Current Gain** (Note 3)	**20**	**39**			$I_C = 50$ mA	$V_{CE} = -5.0$ V
h_{FE}	**DC Pulse Current Gain** (Note 3)	**30**	**40**	**90**		$I_C = 1.0$ A	$V_{CE} = -5.0$ V
$h_{FE}(-55°C)$	DC Pulse Current Gain (Note 3)	15	24			$I_C = 1.0$ A	$V_{CE} = -5.0$ V
h_{FE}	**DC Pulse Current Gain** (Note 3)	**15**	**28**			$I_C = 2.0$ A	$V_{CE} = -5.0$ V
h_{fe}	**High Frequency Current Gain (f = 20 MHz)**	**2.5**	**4.8**			$I_C = 0.2$ A	$V_{CE} = -5.0$ V
$V_{CE(sat)}$	Pulsed Collector Saturation Voltage (Note 3)		—0.38	—0.46	Volts	$I_C = 1.0$ A	$I_B = 0.1$ A
$V_{CE(sat)}$	**Pulsed Collector Saturation Voltage** (Note 3)		**—0.73**	**—0.85**	**Volts**	$I_C = 2.0$ A	$I_B = 0.2$ A
$V_{BE(sat)}$	Pulsed Base Saturation Voltage (Note 3)		—0.96	—1.2	Volts	$I_C = 1.0$ A	$I_B = 0.1$ A
$V_{BE(sat)}$	Pulsed Base Saturation Voltage (Note 3)		—1.28	—1.5	Volts	$I_C = 2.0$ A	$I_B = 0.2$ A
$V_{BE}(on)$	Pulsed Base Emitter "ON" Voltage (Note 3)			—1.5	Volts	$I_C = 2.0$ A	$V_{CE} = -5.0$ V
I_{CES}	Collector Cutoff Current		.002	1.0	μA	$V_{CE} = -60$ V	$V_{BE} = 0$
I_{EBO}	Emitter Cutoff Current			1.0	μA	$I_C = 0$	$V_{EB} = -4.0$ V
$I_{CEX}(150°C)$	Collector Reverse Current			500	μA	$V_{CE} = -60$ V	$V_{EB} = -2.0$ V
C_{cb}	Collector to Base Capacitance		46	120	pF	$I_E = 0$	$V_{CB} = -10$ V

NOTES:

(1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
(2) This rating refers to a high current point where collector to emitter voltage is lowest.
(3) Pulse Conditions: length = 300 μs; duty cycle = 1%.