

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	2N3634	2N3635	2N3636	2N3637	Unit
Collector-emitter voltage	V_{CEO}	140	140	175	175	V
Collector-base voltage	V_{CBO}	140	140	175	175	V
Emitter-base voltage	V_{EBO}	5.0				V
Collector current-continuous	I_C	1.0				A
Total device dissipation @ $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	1.0				Watts
		5.71				mW/ $^\circ\text{C}$
Total device dissipation @ $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	5.0				Watts
		28.6				mW/ $^\circ\text{C}$
Operating and storage junction temperature range	T_J, T_{stg}	-65 to +200				$^\circ\text{C}$
Thermal resistance, junction to ambient	$R_{\theta JA}$	175				$^\circ\text{C}/\text{W}$
Thermal resistance, junction to case	$R_{\theta JC}$	35				$^\circ\text{C}/\text{W}$

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

CHARACTERISTICS		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-emitter breakdown voltage ($I_C = 10\text{mA}$)	2N3634, 2N3635 2N3636, 2N3637	$V_{(BR)CEO}$	140 175	- -	V
Emitter-base cutoff current ($V_{EB} = 3.0\text{V}$) ($V_{EB} = 5.0\text{V}$)		I_{EBO}	-	50 10	nA μA
Collector-emitter cutoff current ($V_{CE} = 100\text{V}$)		I_{CEO}	-	10	μA
Collector-base cutoff current ($V_{CB} = 100\text{V}$) ($V_{CB} = 140\text{V}$) ($V_{CB} = 175\text{V}$)	2N3634, 2N3635 2N3636, 2N3637	I_{CBO}	- - -	100 10 10	nA μA μA

ON CHARACTERISTICS ⁽¹⁾

DC Current Gain ($I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 1.0\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 10\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 50\text{mA}, V_{CE} = 10\text{V}$) ($I_C = 150\text{mA}, V_{CE} = 10\text{V}$)	2N3634, 2N3636	h_{FE}	25 45 50 50 30	- - - 150 -	-
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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

CHARACTERISTICS		Symbol	Min	Max	Unit
DC Current Gain ($I_C = 0.1\text{mA}$, $V_{CE} = 10\text{V}$) ($I_C = 1.0\text{mA}$, $V_{CE} = 10\text{V}$) ($I_C = 10\text{mA}$, $V_{CE} = 10\text{V}$) ($I_C = 50\text{mA}$, $V_{CE} = 10\text{V}$) ($I_C = 150\text{mA}$, $V_{CE} = 10\text{V}$)	2N3635, 2N3637	h_{FE}	55	-	-
			90	-	
			100	-	
			100	300	
			60	-	
Collector-emitter saturation voltage ($I_C = 10\text{mA}$, $I_B = 1.0\text{mA}$) ($I_C = 50\text{mA}$, $I_B = 5.0\text{mA}$)		$V_{CE(sat)}$	-	0.3 0.6	V
Base-emitter saturation voltage ($I_C = 10\text{mA}$, $I_B = 1.0\text{mA}$) ($I_C = 50\text{mA}$, $I_B = 5.0\text{mA}$)		$V_{BE(sat)}$	- 0.65	0.8 0.9	V
SMALL SIGNAL CHARACTERISTICS					
Magnitude of small signal current gain ($I_C = 30\text{mA}$, $V_{CE} = 30\text{V}$, $f = 100\text{MHz}$)	2N3634, 2N3636	$ h_{fe} $	1.5	8.0	-
	2N3635, 2N3637		2.0	8.5	
Small-Signal Current Gain ($I_C = 10\text{mA}$, $V_{CE} = 10\text{V}$, $f = 1.0\text{kHz}$)	2N3634, 2N3636	h_{fe}	40	160	-
	2N3635, 2N3637		80	320	
Output Capacitance ($V_{CB} = 20\text{V}$, $I_E = 0\text{A}$, $100\text{kHz} \leq f \leq 1.0\text{MHz}$)		C_{obo}	-	10	pF
Input Capacitance ($V_{EB} = 1.0\text{V}$, $I_C = 0\text{A}$, $100\text{kHz} \leq f \leq 1.0\text{MHz}$)		C_{ibo}	-	75	pF
Noise-Figure ($V_{CE} = 10\text{V}$, $I_C = 0.5\text{mA}$, $R_g = 1\text{k}\Omega$, $f = 100\text{Hz}$) ($V_{CE} = 10\text{V}$, $I_C = 0.5\text{mA}$, $R_g = 1\text{k}\Omega$, $f = 1.0\text{kHz}$) ($V_{CE} = 10\text{V}$, $I_C = 0.5\text{mA}$, $R_g = 1\text{k}\Omega$, $f = 10\text{kHz}$)		NF	--	5.0 3.0 3.0	dB
SWITCHING CHARACTERISTICS					
Delay time		t_d	-	100	ns
Rise time		t_r	-	100	ns
Storage time		t_s	-	500	ns
Fall time		t_f	-	150	ns
Turn-off Time		t_{off}	-	600	ns

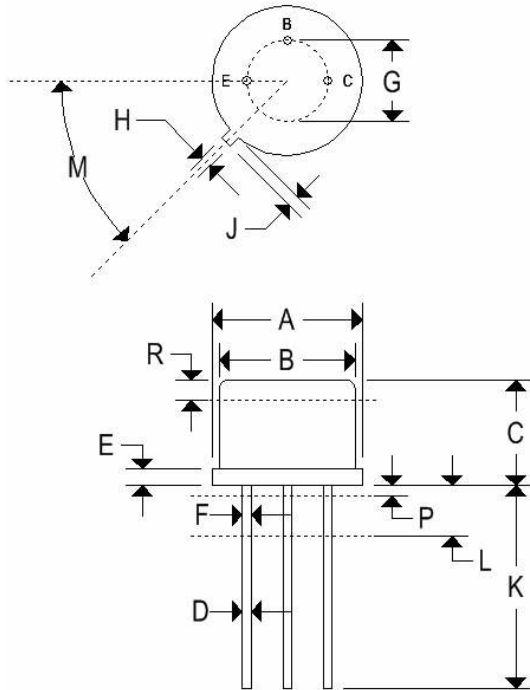
1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

2N3634-2N3637

PNP SILICON MEDIUM POWER TRANSISTORS

MECHANICAL CHARACTERISTICS

Case	TO-39
Marking	Alpha-numeric
Polarity	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-

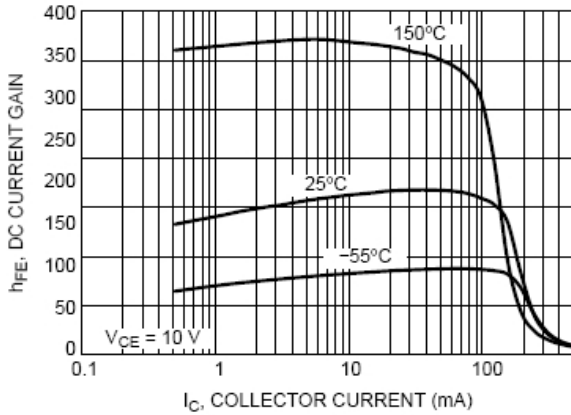


Figure 1. DC Current Gain

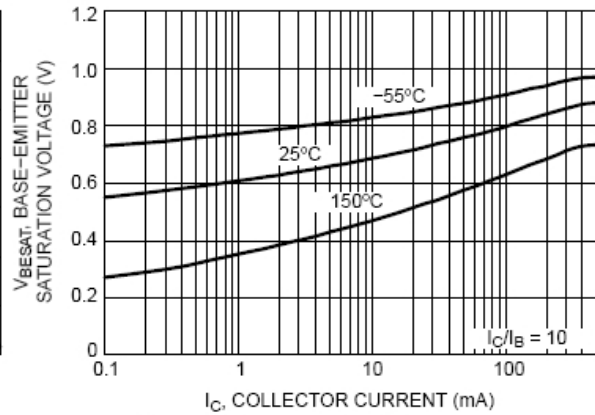


Figure 2. Base-Emitter Saturation Voltage

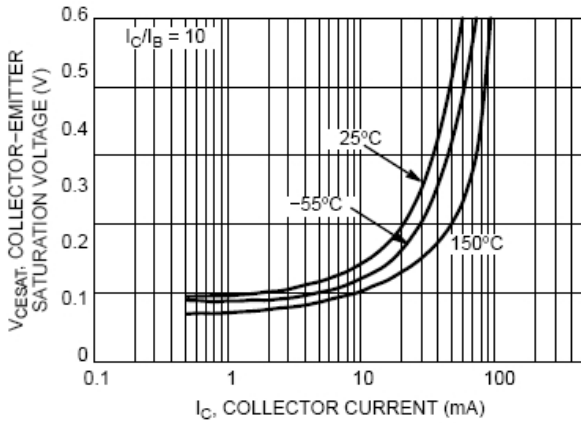


Figure 3. Collector-Emitter Saturation Voltage

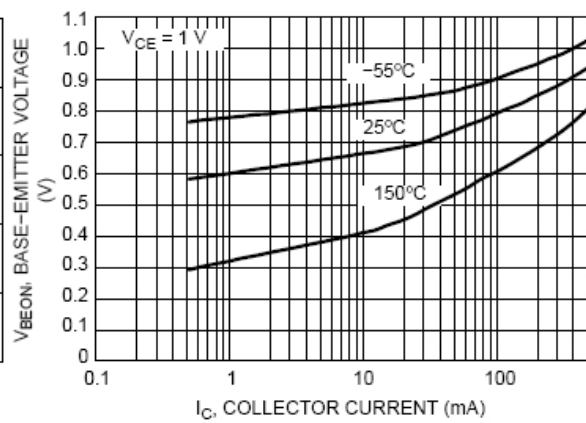


Figure 4. Base-Emitter Voltage

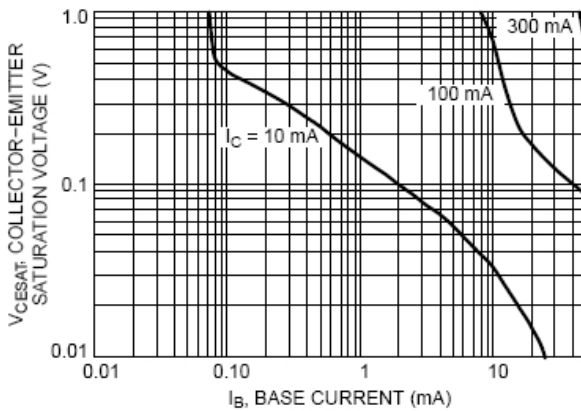


Figure 5. Collector Saturation Region

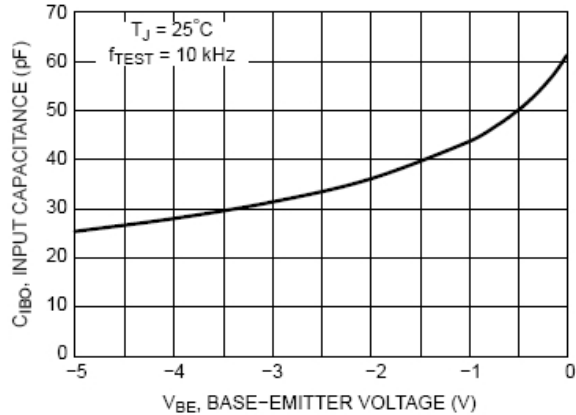


Figure 6. Input Capacitance

2N3634-2N3637

PNP SILICON MEDIUM POWER TRANSISTORS

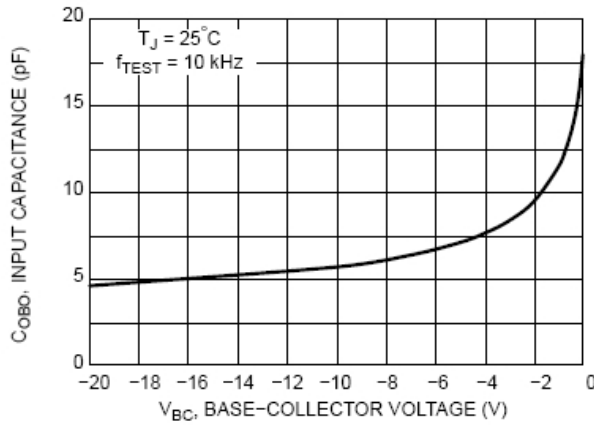


Figure 7. Output Capacitance

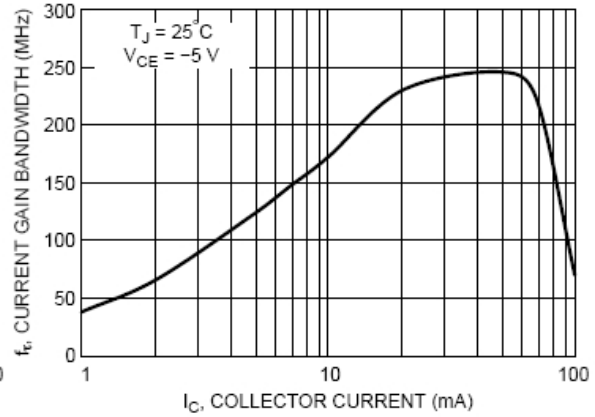


Figure 8. Current Gain Bandwidth Product