PRODUCT SPECIFICATIONS

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TYPE: 2N3252

CASE OUTLINE: TO-205AD (TO-39)

NPN SILICON TRANSITOR

ABSOLUTE MAXIMUM RATING:

Collector to Base Voltage	BV_{CBO}	60	Vdc
Emitter to Base Voltage	BV_{EBO}	5.0	Vdc
Collector to Emitter Voltage	BV_{CEO}	30	Vdc
Collector to Emitter Voltage	BV_{CEV}		Vdc
Continuous Collector Current	I_C		mAdc
Peak Collector Current	I_{CM}		Adc
Power Dissipation T_A = 25 °C	P_D		Watts
Power Dissipation T_C = 25 °C	P_D	5.0	Watts
Storage Temperature	T_{stg}	-65 to +200	°C
Operating Temperature	T_J	-65 to +200	°C
Lead Temperature From Case	T_L		°C

ELECTRICAL CHARACTERISTICS TA @ 25 °C

PARAMETERS	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Voltage	BV_{CBO}	I_C = 10μA	60			Vdc
Emitter to Base Voltage	BV_{EBO}	I_E = 10μA	5.0			Vdc
Collector to Emitter Voltage	BV_{CEO}	I_C = 10mA	30			Vdc
Collector to Emitter Voltage	BV_{CEO}					Vdc
Collector to Emitter Voltage	BV_{CER}					Vdc
Collector Cutoff Current	I_{CBO}	V_{CB} = 40V			0.50	μA
Collector Cutoff Current	I_{CBO}	V_{CB} = 40V, T_A = 100°C			75	μA
Collector Cutoff Current	I_{CEX}	V_{CE} = 40V, $V_{EB(off)}$ = 4.0V			0.5	μA
Base Cutoff Current	I_{BL}	V_{CE} = 40V, $V_{EB(off)}$ = 4.0V			0.50	μA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 4.0V			0.05	μA
D.C. Current Gain Pulsed*	h_{FE}	I_C = 150mA, V_{CE} = 1.0V	30			-
D.C. Current Gain Pulsed*	h_{FE}	I_C = 500mA, V_{CE} = 1.0V	30		90	-
D.C. Current Gain Pulsed*	h_{FE}	I_C = 1.0A, V_{CE} = 5.0V	25			-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
Saturation Voltage*	$V_{CE(sat)}$	I_C = 150mA, I_B = 15mA			0.3	Vdc
Saturation Voltage*	$V_{CE(sat)}$	I_C = 500mA, I_B = 500mA			0.5	Vdc
Saturation Voltage*	$V_{CE(sat)}$	I_C = 1.0A, I_B = 100mA			1.0	Vdc
Base Emitter Voltage*	$V_{BE(sat)}$	I_C = 150mA, I_B = 15mA			1.0	Vdc
Base Emitter Voltage*	$V_{BE(sat)}$	I_C = 500mA, I_B = 50mA	0.7		1.3	Vdc
Base Emitter Voltage*	$V_{BE(sat)}$	I_C = 1.0A, I_B = 100mA			1.8	Vdc

Notes: *Pulse Width ≤300usec 2% Duty Cycle

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SMALL SIGNAL CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS
Current Gain at f = 1.0kHz	h_{fe}				-
Input Capacitance V_{EB} = 0.5V, f = 100kHz	C_{ib}			80	pF
Output Capacitance V_{CB} = 10V, f = 100kHz	C_{ob}			12	pF
Transition Frequency I_C = 50mA, V_{CE} = 10V, f = 100 MHz	f_T	200			MHz
Input Impedance	h_{ie}				KΩ
Voltage Feedback Ratio	h_{re}				X10-4
Output Admittance	h_{oe}				μmhos
Noise Figure	NF				dB
Total Control Charge I_C = 500mA, V_{CC} = 30V, I_{B1} = 50mA	Q_T			5.0	nC
Base-Emitter Voltage Differential	$\lvert V_{BE1}-V_{BE2} \rvert$				mVdc
Base-Emitter Voltage Differential Change Due to Temp	$\frac{\Delta(V_{BE1}-V_{BE2})}{T_A}$				μV/°C

SWITCHING CHARACTERISTICS

		SYMBOL	MIN	TYP	MAX	UNITS
Turn-On Time		t_{on}				ns
Turn-Off Time		t_{off}				ns
Delay Time	I_C = 500mA, V_{CC} = 30V, V_{BE} = 20V, I_{B1} = 50mA	t_d			15	ns
Rise Time		t_r			30	ns
Storage Time	I_C = 500mA, I_{B1} = I_{B2} = 50mA, V_{CC} = 30V	t_s			40	ns
Fall Time		t_f			30	ns

FUNCTIONAL TEST

	SYMBOL	MIN	TYP	MAX	UNITS
Common-Emitter Amplifier Power Gain	GPE				dB
Power Output	Pout				Watt
Collector Efficiency	η				%
Power Output	Pout				Watt
Second Breakdown Collector Current	$I_{S/B}$				A
Thermal-Resistance, Junction to Case	$R_{\theta JC}$			35	°C/W