



PRODUCT SPECIFICATIONS

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TYPE: MJH16018

CASE OUTLINE: TO-218

NPN SILICON HIGH VOLTAGE POWER TRANSISTOR

ABSOLUTE MAXIMUM RATING:

Collector to Base Voltage	BV_{CBO}	1500	Vdc
Collector to Emitter Voltage	BV_{CEV}	800	Vdc
Emitter to Base	BV_{EBO}	6.0	Vdc
Collector to Emitter	$BV_{CEO(sus)}$		Vdc
Continuous Collector Current	I_C	10	Adc
Peak Collector Current	I_{CM}	15	Adc
Power Dissipation $T_A = 25^\circ C$	P_D		Watts
Power Dissipation $T_C = 25^\circ C$	P_D	150	Watts
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$
Operating Temperature	T_J	-55 to +150	$^\circ C$
Lead Temperature From Case	T_L	275	$^\circ C$

ELECTRICAL CHARACTERISTICS $T_A @ 25^\circ C$

PARAMETERS	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Voltage	BV_{CBO}					Vdc
Emitter to Base Voltage	BV_{EBO}					Vdc
Collector to Emitter Voltage	$BV_{CEO(sus)}$	$I_C = 100mA$	800			Vdc
Collector to Emitter Voltage	BV_{CEO}					Vdc
Collector to Emitter Voltage	BV_{CEV}					Vdc
Collector Cutoff Current	I_{CER}	$V_{CE} = 1500V R_{BE} = 50\Omega T_C = 100^\circ C$			2.5	mA
Collector Cutoff Current	I_{CBO}					mA
Collector Cutoff Current	I_{CES}					mA
Collector Cutoff Current	I_{CEX}	$V_{CE} = 1500V V_{BE(OFF)} = 1.5V$			250	μA
Collector Cutoff Current	I_{CEX}	$V_{CE} = 1500V V_{BE(OFF)} = 1.5V T_C = 100^\circ C$			1.5	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 6V$			100	μA
D.C. Current Gain Pulsed*	h_{FE}	$I_C = 5A V_{CE} = 5V$	7.0			-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
D.C. Current Gain Pulsed*	h_{FE}					-
Saturation Voltage*	$V_{CE(sat)}$	$I_C = 5.0A I_B = 1.0A$			1.5	Vdc
Saturation Voltage*	$V_{CE(sat)}$	$I_C = 10A I_B = 4.0A$			1.5	Vdc
Saturation Voltage*	$V_{CE(sat)}$	$I_C = 5.0A I_B = 1.0A T_C = 100^\circ C$			2.0	Vdc
Base Emitter Voltage*	$V_{BE(sat)}$					Vdc
Base Emitter Voltage*	$V_{BE(sat)}$	$I_C = 5.0A I_B = 1.0A$			1.5	Vdc
Base Emitter Voltage*	$V_{BE(sat)}$	$I_C = 5.0A I_B = 1.0A T_C = 100^\circ C$			1.5	Vdc
Base Emitter Voltage*	$V_{BE(on)}$					Vdc

Notes: *Pulse Width $\leq 300\mu sec$ 2% Duty Cycle



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SMALL SIGNAL CHARACTERISTICS

	SYMBOL	MIN	TYP	MAX	UNITS
Current Gain at F =	h_{fe}				-
Input Capacitance	C_{ib}				pf
Output Capacitance $V_{CB} = 10V$ $f = 1KHz$	C_{ob}			450	pf
Transition Frequency	f_T				MHz
Input Impedance					Ohms
Voltage Feedback Ratio					X10-4
Output Admittance					$\mu mhos$
Noise Figure	NF				dB

SWITCHING CHARACTERISTICS

Resistive Load			SYMBOL	MIN	TYP	MAX	UNITS
Storage Time	$I_C = 5.0A$ $V_{CC} = 250V$ $I_{B1} = 1.0A$ $V_{BE(OFF)} = 2.0V$ $P_W = 30\mu s$ $DC \leq 2\%$		t_s			2400	ns
Fall Time			t_f			650	ns
Delay Time			t_d			100	ns
Rise Time	$I_C = 5.0A$ $V_{CC} = 250V$ $I_{B1} = 1.0A$ $I_{B2} = 2.0A$ $R_{B2} = 3\Omega$ $P_W = 25\mu s$ $DC \leq 2\%$		t_r			400	ns
Storage Time			t_s			3000	ns
Fall Time			t_f			1200	ns
Inductive Load			SYMBOL	MIN	TYP	MAX	UNITS
Storage Time	$I_C = 5.0A$ $I_{B1} = 1.0A$ $V_{BE(OFF)} = 2.0V$ $V_{CE(pk)} = 400V$ $P_W = 25\mu s$	$T_J = 25^\circ C$	t_{sv}			3000	ns
Crossover Time			t_c			500	ns
Fall Time			t_{fi}			400	ns
Storage Time		$T_J = 100^\circ C$	t_{sv}			3600	ns
Crossover Time			t_c			620	ns
Fall Time			t_{fi}			460	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	$R_{\theta JC}$			1.0	$^\circ C/W$