Preliminary Data Sheet

X00205

SPT420

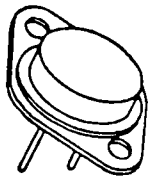
NPN HIGH VOLTAGE HIGH SPEED POWER TRANSISTOR 40 AMPS, 1000V

SSDI

14830 VALLEY VIEW
LA MIRADA, CA.90638
(213)921-9660
TWX 910-583-4807
FAX 213-921-2396

CASE STYLE

JEDEC TO-3 with .060 pins



FEATURES

- VERY FAST SWITCHING SPEED (100KHz)
- HIGH VOLTAGE (1000V)
- LOW VCE (SAT) AT IC = 20A
- HIGH CURRENT REPLACEMENT FOR 2N6678, 2N6921A
- EXTENDED RBSOA

MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Collector-Emitter Voltage	VCEO	450	Volts
Collector-Base Voltage	VCBO	1000	Volts
Emitter-Base Voltage	VEBO	10	Volts
Peak Collector Current	IC	60	Amps
Base Current	IB	6	Amps
Total Device Dissipation @ Tc = 25°C	PD	175	Watts
Derate Above 25°C		1	W/°C
Operating and Storage Temperature	TJ,Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case	RθJC	0.63	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage* (IC =200 mAdc)	BVCEO	450	-	Volts
Collector-Base Breakdown Voltage (IC =200 µAdc)	BVCBO	1000	-	Volts

Note: Specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Emitter-Base Breakdown Voltage (IE =500 mAdc)	BVEBO	10	-	Vdc
Collector Cutoff Current (VCB =850 Vdc)	ICBO	-	1	uAdc
Emitter Cutoff Current (VEB = 5 Vdc)	IEBO	-	0.1	uAdc
DC Current Gain*	hFE			
(IC = 5 Adc, VCE = 5 Vdc)		25	-	
(IC = 20 Adc, VCE = 5 Vdc)		10	-	
(IC = 40 Adc, VCE = 5 Vdc)		5	-	
Collector-Emitter Saturation Voltage*	VCE(SAT)			Vdc
(IC = 10 Adc, IB = 1 Adc)		-	0.8	
(IC = 20 Adc, IB = 4 Adc)		-	1.0	
Base-Emitter Saturation Voltage*	VBE(SAT)			Vdc
(IC = 10 Adc, IB = 1 Adc)		-	1.0	
(IC = 20 Adc, IB = 4 Adc)		-	0.8	
Current Gain Bandwidth Product (IC = 1 Adc, VCE =10 Vdc, f = 1 MHz)	fT	15	-	MHz
Output Capacitance (VCB = 10 Vdc, IE = 0Adc, f = 1 MHz)	Cob	-	500	pf
Delay Time	td	-	0.1	µs
Rise Time	tr	-	0.6	µs
Storage Time	ts	-	2.5	µs
Fall Time	tf	-	0.5	µs

IC = 10A IB1 = 1A
VBB = -5V RBB = 0.6Ω
LC = 0.25mH VCLAMP = 400V

*Pulse Test: Pulse Width = 300us, Duty Cycle = 2%

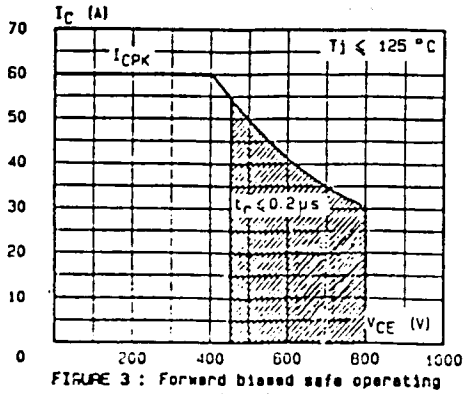


FIGURE 3 : Forward biased safe operating area (FBSOA).

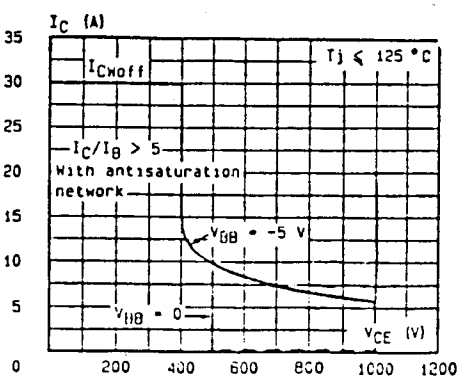


FIGURE 4 : Reverse biased safe operating area (RBSOA).

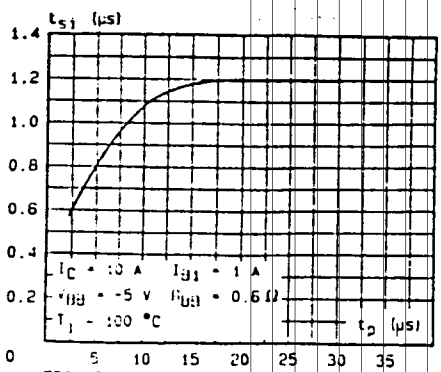


FIGURE 5 : Carrier storage time versus pulse time (inductive load).

SSDI SOLID STATE DEVICES, INC.
P.O. Box 577, La Mirada, California 90637
Telephone (213) 921-9660 ♦ TWX 910-583-4807 ♦ FAX 213-921-2396