

X00214



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SPT 4624 thru SPT 4625

10 AMP NPN HIGH VOLTAGE POWER SWITCHING TRANSISTORS

- FEATURES**
- Collector-Base Voltage: Up to 450 Vdc
 - DC Collector Current: 10A Continuous
 - High Frequency: 50 MHz Min.
 - Low $V_{CE(Sat)}$.85 Vdc @ 5 Adc
 - Fast Switching 500 nsec max.
 - Popular TO-3 Package

MAXIMUM RATINGS

Rating	Symbol	SPT 4624	SPT 4625	Unit
Collector-Emitter Voltage	V_{CER}	350	400	Vdc
Collector-Base Voltage	V_{CB}	400	450	Vdc
Emitter-Base Voltage	V_{EB}	7		Vdc
Collector Current – Continuous	I_C	10		A dc
Base Current	I_B	2		A dc
Total Device Dissipation @ $T_C = 25^\circ C$ Derate above $25^\circ C$	P_D	87	500	Watts mW/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ C$

PHYSICAL DIMENSIONS

In accordance with JEDEC (TO-3) outline

TO-3

PIN 1: BASE
 PIN 2: EMITTER
 CASE: COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
B	-	22.23	-	0.875
C	6.35	11.43	0.250	0.450
D	0.87	1.68	0.034	0.066
E	-	3.43	-	0.135
F	29.90	30.40	1.177	1.197
G	10.67	11.18	0.420	0.440
H	5.21	5.72	0.205	0.225
J	16.64	17.15	0.655	0.675
K	7.82	-	0.312	-
L	3.84	4.00	0.151	0.161
T	-	13.34	-	0.525
T	-	4.78	-	0.188

All JEDEC dimensions and notes apply.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.4	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

Characteristic	Fig. No.	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage* ($I_C = .1$ mAdc, $I_B = R = 1K\Omega$)	SPT 4624 SPT 4625	BV_{CER}	350 400		Vdc
Collector Cutoff Current ($V_{CE} = 150$) ($V_{CE} = 200$)	SPT 4624 SPT 4625	I_{CEO}		10 10	μA dc μA dc
Collector Cutoff Current ($V_{CE} = 250$ Vdc, $V_{EB(off)} = 1.5$ Vdc) ($V_{CE} = 350$ Vdc, $V_{EB(off)} = 1.5$ Vdc) ($V_{CE} = 150$ Vdc, $V_{EB(off)} = 1.5$ Vdc, $T_C = 150^\circ C$) ($V_{CE} = 200$ Vdc, $V_{EB(off)} = 1.5$ Vdc, $T_C = 150^\circ C$)	SPT 4624 SPT 4625 SPT 4624 SPT 4625	I_{CEX}		1.0 1.0 1.0 1.0	mAdc mAdc mAdc mAdc
Emitter Cutoff Current ($V_{BE} = 7$ Vdc, $I_C = 0$)	All Types	I_{EBO}		1.0	A dc mA

ELECTRICAL CHARACTERISTICS

Characteristic	Fig. No.	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

DC Current Gain* ($I_C = 100 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$) ($I_C = 2 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$) ($I_C = 5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)	All Types	h_{FE}^*	20 30 15	100	
Collector-Emitter Saturation Voltage* ($I_C = 7 \text{ Adc}$, $I_B = 0.7 \text{ Adc}$) ($I_C = 5 \text{ Adc}$, $I_B = 0.5 \text{ Adc}$)	All Types	$V_{CE(Sat)}^*$		1.5 0.85	Vdc
Base-Emitter Saturation Voltage* ($I_C = 7 \text{ Adc}$, $I_B = 0.7 \text{ Adc}$) ($I_C = 5 \text{ Adc}$, $I_B = 0.5 \text{ Adc}$)	All Types	$V_{BE(Sat)}^*$		1.60 1.40	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product ($I_C = 100 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 20 \text{ MHz}$)	All Types	f_T	50		MHz
Output Capacitance ($V_{CB} = 50 \text{ Vdc}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	All Types	C_{ob}		80	pF

SWITCHING CHARACTERISTICS

Delay Time	$(V_{CC} = 85 \text{ Vdc}$, $V_{EB(off)} = 8 \text{ Vdc}$, $I_C = 1 \text{ Adc}$, $I_{B1} = 100 \text{ mAdc}$)		t_r		500	ns
Rise Time						
Storage Time	$(V_{CC} = 85 \text{ Vdc}$, $I_C = 1 \text{ Adc}$, $I_{B1} = I_{B2} = 100 \text{ mAdc}$)		t_s		1.2	μs
Fall Time						

*Pulse Test: Pulse Width 300 μs , Duty Cycle = %

