



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

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**SPT6233 – SPT6235
Series**

**5 AMP
250 – 350 Volts
NPN Transistor**

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SPT6233 _ _ _ _
SPT6234 _ _ _ _
SPT6235 _ _ _ _

Screening ^{2/} _ = Not Screen
TX = TX Level
TXV = TXV Level
S = S Level

Lead Bend ^{3/ 4/} _ = Straight Leads
UB = Up Bend
DB = Down Bend

Pin Out Configuration ^{5/} _ = Normal
R = Optional

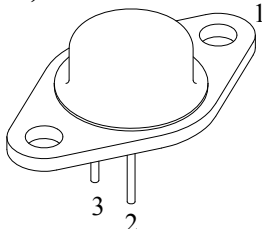
Package ^{3/} /66 = TO-66
M = TO-254
J = TO-257

Features:

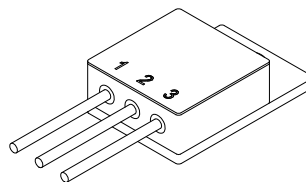
- Switching Power Transistor
- Isolated and Non-isolated Packages Available
- High Power Dissipation: Up to 50W
- Rugged SOA
- Also Available in TO-39, TO-111, and Isolated TO-59, Consult Factory
- Replacement for 2N6233 through 2N6235
- TX, TXV, S-Level Screening Available

Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage	SPT6233	V _{CEO}	225	Volts
	SPT6234		275	
	SPT6235		325	
Collector – Base Voltage	SPT6233	V _{CBO}	250	Volts
	SPT6234		300	
	SPT6235		350	
Emitter – Base Voltage		V _{CBO}	6	Volts
Continuous Collector Current		I _C	5	Amps
Power Dissipation @ TC = 25°C	TO-66 (/66)	P _D	50	W
	TO-254 (M)		39	
	TO-257 (J)		33	
Operating & Storage Temperature		Top & Tstg	-65 to +200	°C
Maximum Thermal Resistance Junction to Case	TO-66 (/66)	R _{θJC}	3.2	°C/W
	TO-254 (M)		4.5	
	TO-257 (J)		5.3	

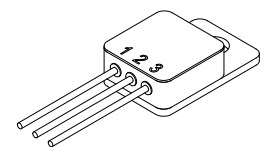
TO-66 (/66)



TO-254 (M)



TO-257 (J)



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: TR0029E



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SPT6233 – SPT6235 Series

Electrical Characteristics ^{6/}		Symbol	Min	Typ	Max	Units
Collector – Emitter Sustaining Voltage (I _C = 20 mA)	SPT6233 SPT6234 SPT6235	BV _{CEO}	225 275 325	— — —	— — —	Volts
Emitter – Cutoff Current	V _{BE} = 6 V	I _{EBO}	—	—	100	uA
Collector – Cutoff Current	SPT6233, V _{CB} = 250 V SPT6234, V _{CB} = 300 V SPT6235, V _{CB} = 350 V	I _{CBO}	—	—	100	uA
Collector – Cutoff Current	SPT6233, V _{CE} = 225 V SPT6234, V _{CE} = 275 V SPT6235, V _{CE} = 325 V	I _{CEO}	—	—	1.0	mA
Collector – Cutoff Current (V _{BE} = -1.5 V, T _c = 150 °C)	SPT6233, V _{CE} = 250 V SPT6234, V _{CE} = 300 V SPT6235, V _{CE} = 350 V	I _{CEX}	—	—	1.0	mA
DC Forward Current Transfer Ratio *	V _{CE} = 5V, I _C = 0.1A V _{CE} = 5V, I _C = 1A V _{CE} = 5V, I _C = 3A	h _{FE}	25 15 9	— — —	— 125 —	—
Collector – Emitter Saturation Voltage *	I _C = 5A, I _B = 1A I _C = 1.0A, I _B = 0.1A	V _{CE(SAT)}	— —	— —	2.5 0.5	Volts
Base – Emitter Saturation Voltage *	I _C = 5A, I _B = 1A I _C = 1.0A, I _B = 0.1A	V _{BE(SAT)}	— —	— —	2.0 1.0	Volts
Base – Emitter On Voltage *	I _C = 1A, V _{ce} = 5 V	V _{BE(ON)}	—	—	1.0	Volts
Safe Operating Area (tp = 1 sec)	V _{CE} = 10V V _{CE} = 45V	SOA	5.0 1.0	— —	— —	Amp
Frequency Transition	V _{CE} = 10V, I _C = 0.25A, f = 10MHz	f _T	20	—	—	MHz
Output Capacitance	V _{CE} = 10V, f = 1MHz	C _{ob}	—	—	250	pF
Rise Time (V _{CC} = 200V, I _C = 1.0A, I _{B1} = 0.1A)		t _r	—	0.5	0.75	μsec
Storage Time (V _{CC} = 200V, I _C = 1.0A, I _{B1} = I _{B2} = 0.1A)		t _s	—	3.5	5.0	μsec
Fall Time (V _{CC} = 200V, I _C = 1.0A, I _{B1} = I _{B2} = 0.1A)		t _f	—	0.5	0.8	μsec

NOTES:

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

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

4/ Up and Down Bend Configurations are Available for 'M' (TO-254) and 'J' (TO-257) Packages Only.

5/ Optional Pin Out Configurations are Available for 'M' (TO-254) and 'J' (TO-257) Packages Only.

6/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

Available Part Numbers:

SPT6233/66; SPT6233M; SPT6233J; SPT6233MR; SPT6233JR
 SPT6234/66; SPT6234M; SPT6234J; SPT6234MR; SPT6234JR
 SPT6235/66; SPT6235M; SPT6235J; SPT6235MR; SPT6235JR

PIN ASSIGNMENT (Standard)

Package	Collector	Emitter	Base
TO-66 (/66)	Case (1)	Pin 2	Pin 3
TO-254 (M)	Pin 1	Pin 2	Pin 3
TO-257 (J)	Pin 1	Pin 2	Pin 3

PIN ASSIGNMENT (Optional)

Package	Collector	Emitter	Base
TO-254 (MR)	Pin 2	Pin 3	Pin 1
TO-257 (JR)	Pin 2	Pin 3	Pin 1