

One Watt High Current Transistors

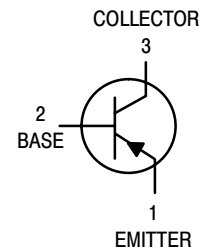
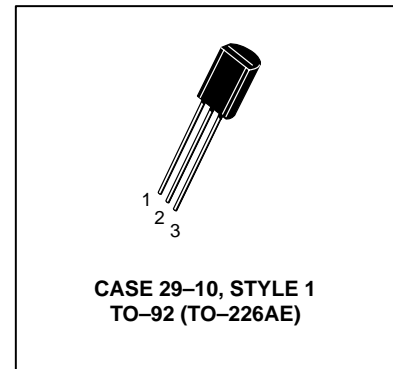
PNP Silicon

MPSW51 MPSW51A*

*ON Semiconductor Preferred Device

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage MPSW51 MPSW51A	V_{CEO}	-30 -40	Vdc
Collector–Base Voltage MPSW51 MPSW51A	V_{CBO}	-40 -50	Vdc
Emitter–Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current — Continuous	I_C	-1000	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	Watts mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.5 20	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	°C



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	125	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	50	°C/W

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ⁽¹⁾ ($I_C = -1.0 \text{ mAdc}, I_E = 0$)	MPSW51 MPSW51A	$V_{(BR)CEO}$	-30 -40	— —	Vdc
Collector–Base Breakdown Voltage ($I_C = -100 \mu\text{Adc}, I_E = 0$)	MPSW51 MPSW51A	$V_{(BR)CBO}$	-40 -50	— —	Vdc
Emitter–Base Breakdown Voltage ($I_E = -100 \mu\text{Adc}, I_C = 0$)		$V_{(BR)EBO}$	-5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = -30 \text{ Vdc}, I_E = 0$) ($V_{CB} = -40 \text{ Vdc}, I_E = 0$)	MPSW51 MPSW51A	I_{CBO}	— —	-0.1 -0.1	μAdc
Emitter Cutoff Current ($V_{EB} = -3.0 \text{ Vdc}, I_C = 0$)		I_{EBO}	—	-0.1	μAdc

1. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

Preferred devices are ON Semiconductor recommended choices for future use and best overall value.