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2N5148 2N5150

NPN SILICON
POWER TRANSISTOR

JEDEC TO-39 CASE

MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

	SYMBOL	2N5148 2N5150	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	2.0	A
Collector Current (PEAK)	I_{CM}	5.0	A
Base Current	I_B	1.0	A
Power Dissipation (T_A=25°C)	P_D	1.0	W
Power Dissipation (T_C=50°C)	P_D	6.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance	θJA	175	°C/W
Thermal Resistance	θJC	35	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N5148 MIN	2N5148 MAX	2N5150 MIN	2N5150 MAX	UNIT
I_{CES}	V_{CE}=60V		1.0		1.0	μA
I_{CES}	V_{CE}=100V		1.0		1.0	mA
I_{CEO}	V_{CE}=40V		50		50	μA
I_{EBO}	V_{EB}=5.0V		1.0		1.0	μA
I_{EBO}	V_{EB}=6.0V		1.0		1.0	mA
BV_{CEO}	I_C=100mA	80		80		V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA		0.46		0.46	V
$V_{CE(SAT)}$	I_C=3.0A, I_B=600mA		5.0		5.0	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=100mA		1.2		1.2	V
$V_{BE(SAT)}$	I_C=2.0A, I_B=200mA		1.5		1.5	V
h_{FE}	V_{CE}=5.0V, I_C=500mA	20		50		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	30	90	70	200	
h_{FE}	V_{CE}=5.0V, I_C=1.0A, T_C=-55°C	15		35		
h_{FE}	V_{CE}=5.0V, I_C=2.0A	15		30		
f_T	V_{CE}=5.0V, I_C=0.5A, f=20MHz	50		60		MHz
C_{ob}	V_{CB}=10V, I_B=0, f=1.0MHz		70		70	pF
t_{ON}	V_{CC}=20V, I_C=1.0A, I_{B1}=100mA	0.1 TYP		0.1 TYP		μs
t_{OFF}	V_{CC}=20V, I_C=1.0A, I_{B1}=I_{B2}=100mA	0.8 TYP		1.2 TYP		μs

NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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