

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5148 2N5150

NPN SILICON
POWER TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5148, 2N5150 types are NPN silicon transistors, manufactured by the epitaxial planar process mounted in a hermetically sealed metal case, designed for high current switching applications.

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

	SYMBOL	2N5148	2N5150	UNIT
Collector-Base Voltage	V _{CB0}	100		V
Collector-Emitter Voltage	V _{CE0}	80		V
Emitter-Base Voltage	V _{EB0}	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	θ _{JA}	175		°C/W
Thermal Resistance	θ _{JC}	35		°C/W

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

SYMBOL	TEST CONDITIONS	2N5148		2N5150		UNIT
		MIN	MAX	MIN	MAX	
I _{CS}	V _{CE} =60V		1.0	1.0		μA
I _{CS}	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