

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5151 2N5153 PNP
2N5152 2N5154 NPN

COMPLEMENTARY SILICON
POWER TRANSISTORS

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5151 series types are complementary 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	2N5151	2N5153	2N5152	2N5154	UNIT
Collector-Base Voltage	V _{CB0}	100		100		V
Collector-Emitter Voltage	V _{CE0}	80		80		V
Emitter-Base Voltage	V _{EB0}	5.5		6.0		V
Collector Current	I _C	5.0		2.0		A
Collector Current (Peak)	I _{CM}	10		10		A
Base Current	I _B	2.5		1.0		A
Power Dissipation (T _A =25°C)	P _D	1.0		1.0		W
Power Dissipation (T _C =50°C)	P _D	10		10		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}		15			°C/W

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

SYMBOL	TEST CONDITIONS	2N5151		2N5152		2N5153		2N5154		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
I _{CES}	V _{CE} =60V		1.0		1.0		1.0		1.0	μA
I _{CES}	V _{CE} =100V		1.0		1.0		1.0		1.0	mA
I _{CEV}	V _{CE} =60V, V _{BE} =2.0V, T _C =150°C		500		500		500		500	μA
I _{CEO}	V _{CE} =40V		50		50		50		50	μA
I _{EB0}	V _{EB} =4.0V (PNP types only)		1.0		-		1.0		-	μA
I _{EB0}	V _{EB} =5.5V (PNP types only)		1.0		-		1.0		-	mA
I _{EB0}	V _{EB} =5.0V (NPN types only)		-		1.0		-		1.0	μA
I _{EB0}	V _{EB} =6.0V (NPN types only)		-		1.0		-		1.0	mA
BV _{CEO}	I _C =100mA	80		80		80		80		V
V _{CE} (SAT)	I _C =2.5A, I _B =250mA		0.75		0.75		0.75		0.75	V
V _{CE} (SAT)	I _C =5.0A, I _B =500mA		1.5		1.5		1.5		1.5	V
V _{BE} (SAT)	I _C =2.5A, I _B =250mA		1.45		1.45		1.45		1.45	V
V _{BE} (SAT)	I _C =5.0A, I _B =500mA		2.2		2.2		2.2		2.2	V
V _{BE} (ON)	V _{CE} =5.0V, I _C =250mA		1.45		1.45		1.45		1.45	V
h _{FE}	V _{CE} =5.0V, I _C =50mA	20		20		50		50		
h _{FE}	V _{CE} =5.0V, I _C =2.5A	30	90	30	90	70	200	70	200	
h _{FE}	V _{CE} =5.0V, I _C =2.5A, T _C =-55°C	15		15		35		35		
h _{FE}	V _{CE} =5.0V, I _C =5.0A	20		20		40		40		
h _{fe}	V _{CE} =5.0V, I _C =0.1A, f=1.0kHz	20		20		50		50		
f _T	V _{CE} =5.0V, I _C =0.5A, f=20MHz	60		60		70		70		MHz
C _{ob}	V _{CB} =10V, I _B =0, f=1.0MHz		250		250		250		250	pF
t _{ON}	V _{CC} =30V, I _C =5.0A, I _{B1} =0.5A	0.5	TYP	0.5	TYP	0.5	TYP	0.5	TYP	μs
t _{OFF}	V _{CC} =30V, I _C =5.0A, I _{B1} =I _{B2} =0.5A	1.3	TYP	1.3	TYP	1.3	TYP	1.3	TYP	μs