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Manufacturers of World Class Discrete Semiconductors

2N3678

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3678 is a Silicon NPN Epitaxial Planar Transistor designed for high speed switching applications.

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

	SYMBOL		UNIT
Collector-Base Voltage	V _{CB0}	75	V
Collector Emitter Voltage	V _{CEO}	55	V
Emitter-Base Voltage	V _{EBO}	6.0	V
Collector Current	I _C	800	mA
Power Dissipation	P _D	0.8	W
Power Dissipation (T _C =25°C)	P _D	4.0	W
Operating and Storage Junction Temperature	T _J , T _{stg}	-65 TO +200	°C
Thermal Resistance	θ _{JA}	218	°C/W
Thermal Resistance	θ _{JC}	43	°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I _{CB0}	V _{CB} =60V		10	nA
I _{CB0}	V _{CB} =60V, T _A =150°C		10	μA
I _{CEV}	V _{CE} =60V, V _{EB} =3.0V		10	nA
I _{BL}	V _{CE} =60V, V _{EB} =3.0V		20	nA
I _{EBO}	V _{EB} =3.0V		10	nA
BV _{CB0}	I _C =10μA	75		V
BV _{CEO}	I _C =10mA	55		V
BV _{EBO}	I _E =10μA	6.0		V
V _{CE} (SAT)	I _C =150mA, I _B =15mA		0.4	V
V _{CE} (SAT)	I _C =500mA, I _B =50mA		1.0	V
V _{BE} (SAT)	I _C =150mA, I _B =15mA	0.6	1.2	V
V _{BE} (SAT)	I _C =500mA, I _B =50mA		2.0	V
h _{FE}	V _{CE} =10V, I _C =100μA	20		
h _{FE}	V _{CE} =10V, I _C =1.0mA	25		
h _{FE}	V _{CE} =10V, I _C =10mA	35		
h _{FE}	V _{CE} =10V, I _C =150mA	40	120	
h _{FE}	V _{CE} =10V, I _C =500mA	25		
h _{FE}	V _{CE} =1.0V, I _C =150mA	20		
f _T	V _{CE} =20V, I _C =20mA, f=100MHz	250		MHz
C _{ob}	V _{CB} =10V, I _E =0		8.0	pF
C _{ib}	V _{EB} =2.0V, I _C =0		30	pF
t _{on}	V _{CC} =30V, I _C =150mA, I _{B1} =15mA		40	ns
t _{off}	V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA		250	ns

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