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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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