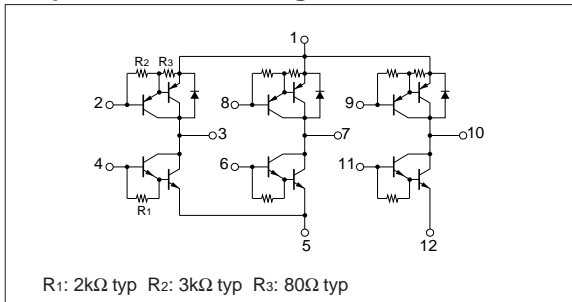


Absolute maximum ratings

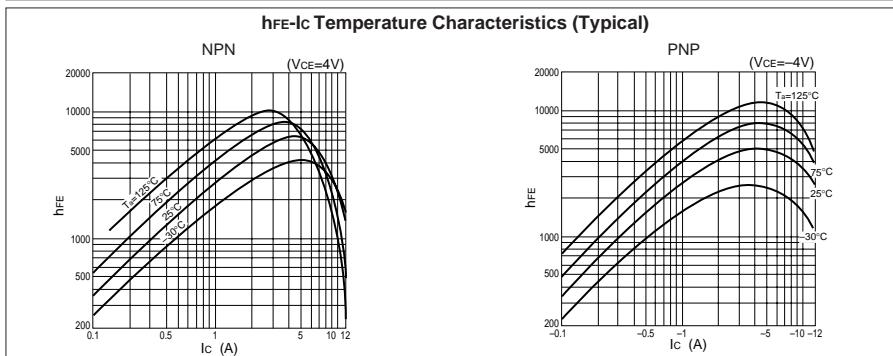
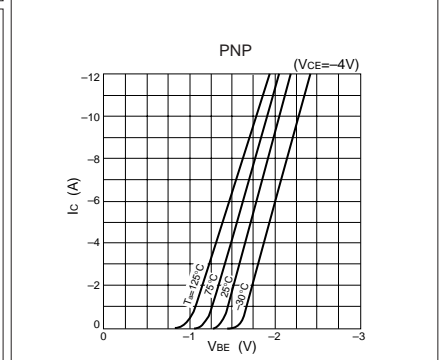
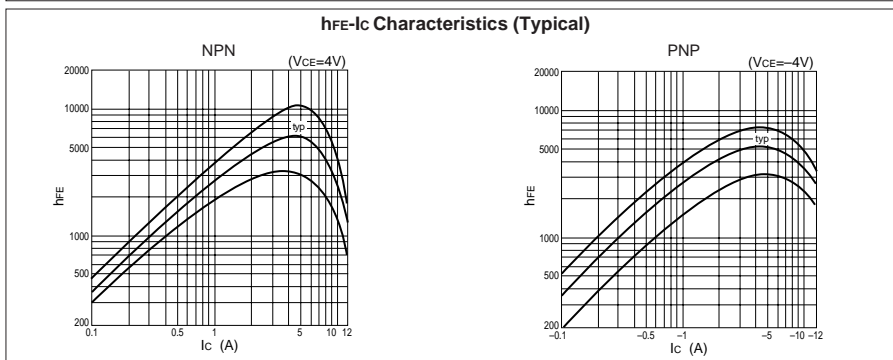
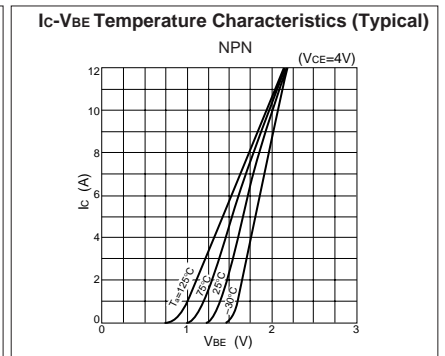
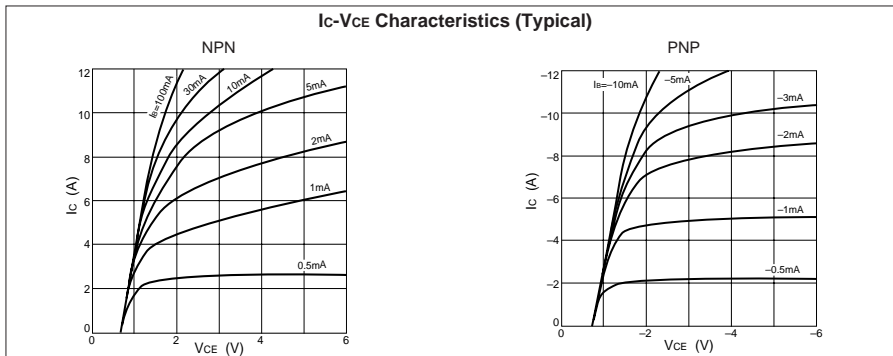
($T_a=25^\circ\text{C}$)

| Symbol | Ratings | | Unit |
|----------------|--|---|--------------------|
| | NPN | PNP | |
| V_{CBO} | 60 | -60 | V |
| V_{CEO} | 60 | -60 | V |
| V_{EBO} | 6 | -6 | V |
| I_c | 6 | -6 | A |
| I_{CP} | 12 ($PW \leq 1\text{ms}, D_u \leq 50\%$) | -12 ($PW \leq 1\text{ms}, D_u \leq 50\%$) | A |
| I_B | 0.5 | -0.5 | A |
| P_T | 5 ($T_a=25^\circ\text{C}$) | | W |
| | 25 ($T_c=25^\circ\text{C}$) | | |
| V_{ISO} | 1000 (Between fin and lead pin, AC) | | V_{rms} |
| T_j | 150 | | $^\circ\text{C}$ |
| T_{stg} | -40 to +150 | | $^\circ\text{C}$ |
| θ_{j-c} | 5 | | $^\circ\text{C/W}$ |

Equivalent circuit diagram



Characteristic curves



Electrical characteristics

($T_a=25^\circ\text{C}$)

| Symbol | NPN | | | | | PNP | | | | | |
|---------------|---------------|------|-------|---------------|--|---------------|------|-------|---------------|-------------------------------------|--|
| | Specification | | | Unit | Conditions | Specification | | | Unit | Conditions | |
| | min | typ | max | | | min | typ | max | | | |
| I_{CBO} | | | 10 | μA | $V_{CB}=60\text{V}$ | | | -10 | μA | $V_{CB}=-60\text{V}$ | |
| I_{EBO} | | | 10 | μA | $V_{EB}=6\text{V}$ | | | -10 | mA | $V_{EB}=-6\text{V}$ | |
| V_{CEO} | 60 | | | V | $I_C=25\text{mA}$ | -60 | | | V | $I_C=-25\text{mA}$ | |
| h_{FE} | 2000 | 5000 | 12000 | | $V_{CE}=4\text{V}, I_C=5\text{A}$ | 2000 | 5000 | 12000 | | $V_{CE}=-4\text{V}, I_C=-5\text{A}$ | |
| $V_{CE(sat)}$ | | | 1.5 | V | $I_C=5\text{A}, I_B=10\text{mA}$ | | | -1.5 | V | $I_C=-5\text{A}, I_B=-10\text{mA}$ | |
| $V_{BE(sat)}$ | | | 2.0 | V | | | | -2.0 | V | | |
| V_{FEC} | | | | V | | | | 2.0 | V | | $I_{FEC}=5\text{A}$ |
| t_{rr} | | | | μs | | | 1.0 | | μs | $I_{FEC}=\pm 0.5\text{A}$ | |
| t_{on} | | 0.8 | | μs | $V_{CC}=\pm 25\text{V}, I_C=5\text{A}, I_{B1}=-I_{B2}=10\text{mA}$ | | | 1.0 | | μs | $V_{CC}=\pm 25\text{V}, I_C=-5\text{A}, I_{B1}=-I_{B2}=-10\text{mA}$ |
| t_{stg} | | 6.0 | | μs | | | | 1.4 | | μs | |
| t_f | | 2.0 | | μs | | | | 0.6 | | μs | |
| f_T | | 80 | | MHz | | | | 120 | | MHz | |
| C_{ob} | | 100 | | pF | $V_{CB}=10\text{V}, f=1\text{MHz}$ | | | 150 | | pF | $V_{CB}=-10\text{V}, f=1\text{MHz}$ |

Characteristic curves

