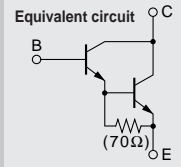


Darlington 2SD2642



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1687)

Application : Audio, Series Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

| Symbol | Ratings | Unit |
|--------|-------------|------|
| VCBO | 110 | V |
| VCEO | 110 | V |
| VEBO | 5 | V |
| Ic | 6 | A |
| Ib | 1 | A |
| Pc | 30(Tc=25°C) | W |
| Tj | 150 | °C |
| Tstg | -55 to +150 | °C |

Electrical Characteristics (Ta=25°C)

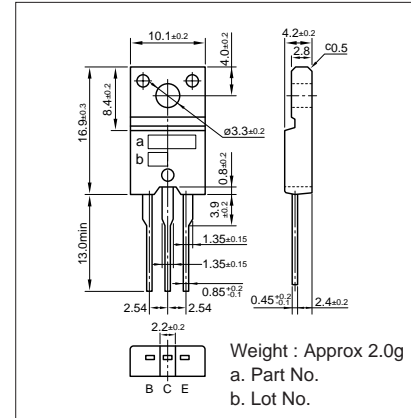
| Symbol | Conditions | Ratings | Unit |
|----------------------|---|----------|------|
| ICBO | V _{CB} =110V | 100max | μA |
| IEBO | V _{EB} =5V | 100max | μA |
| V(BR)CEO | I _C =30mA | 110min | V |
| hFE | V _{CE} =4V, I _C =5A | 5000min* | |
| V _{CE(sat)} | I _C =5A, I _B =5mA | 2.5max | V |
| V _{BE(sat)} | I _C =5A, I _B =5mA | 3.0max | V |
| f _T | V _{CE} =12V, I _E =-0.5A | 60typ | MHz |
| COB | V _{CB} =10V, f=1MHz | 55typ | pF |

*hFE Rank \bar{O} (5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

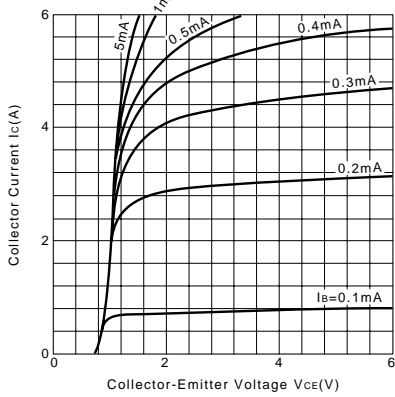
Typical Switching Characteristics (Common Emitter)

| V _{CC} (V) | R _L (Ω) | I _C (A) | V _{BB1} (V) | V _{BB2} (V) | I _{B1} (mA) | I _{B2} (mA) | t _{on} (μs) | t _{stg} (μs) | t _f (μs) |
|---------------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------|
| 30 | 6 | 5 | 10 | -5 | 5 | -5 | 0.8typ | 6.2typ | 1.1typ |

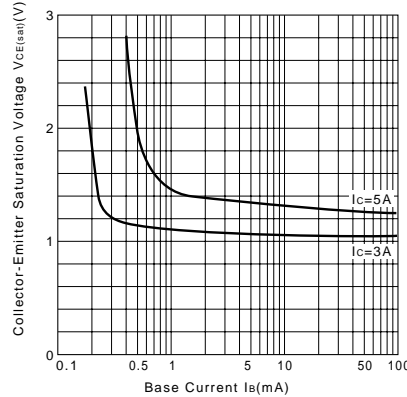
External Dimensions FM20(TO220F)



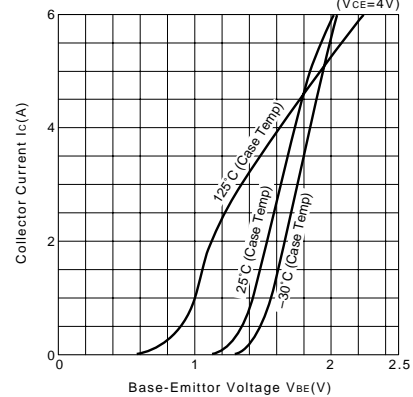
I_C-V_{CE} Characteristics (Typical)



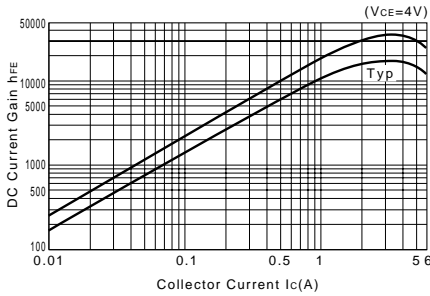
V_{CE(sat)}-I_B Characteristics (Typical)



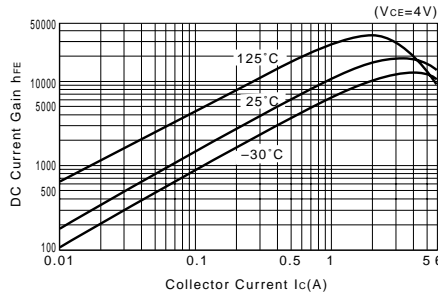
I_C-V_{BE} Temperature Characteristics (Typical)



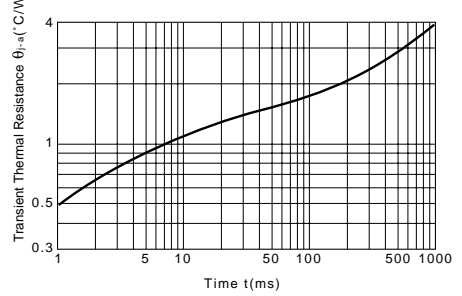
h_{FE}-I_C Characteristics (Typical)



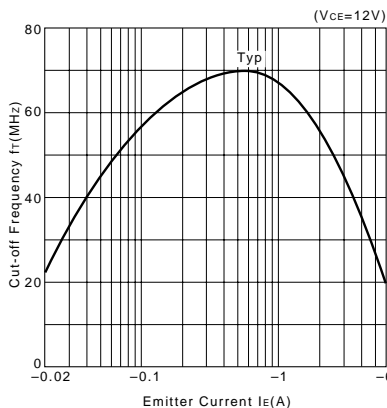
h_{FE}-I_C Temperature Characteristics (Typical)



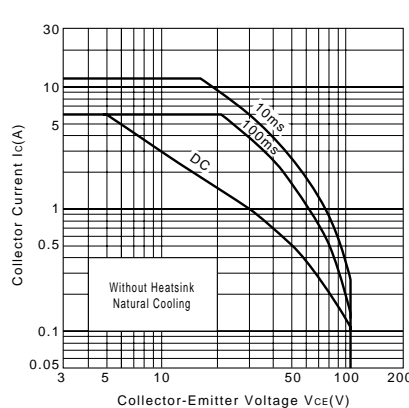
θ_{j-a}-t Characteristics



f_T-I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_c-T_a Derating

