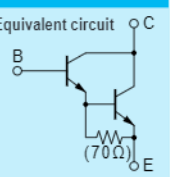
Darlington 2SD2390

Equivalent circuit



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1560)

Application : Audio, Series Regulator and General Purpose

■Absolute maximum ratings (Ta=25°C)

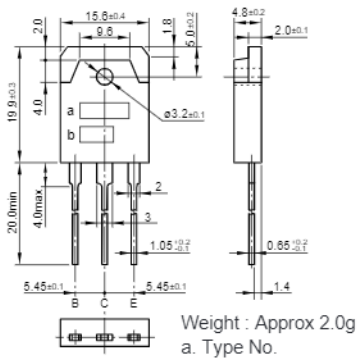
Symbol	2SD2390	Unit
V_{CBO}	160	V
V_{CEO}	150	V
V_{EBO}	5	V
I_C	10	A
I_B	1	A
P_C	100(Tc=25°C)	W
Tj	150	°C
Tstg	−55 to +150	°C

■Electrical Characteristics (Ta=25°C)

Symbol	Conditions	2SD2390	Unit
I_{CBO}	V_{CB}=160V	100max	μA
I_{EBO}	V_{EB}=5V	100max	μA
$V_{(BR)CEO}$	I_C=30mA	150min	V
h_{FE}	V_{CE}=4V, I_C=7A	5000min*	
$V_{CE(sat)}$	I_C=7A, I_B=7mA	2.5max	V
$V_{BE(sat)}$	I_C=7A, I_B=7mA	3.0max	V
f_T	V_{CE}=12V, I_E=−2A	55typ	MHz
C_{OB}	V_{CB}=10V, f=1MHz	95typ	pF

*h_{FE} Rank O(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

External Dimensions MT-100(TO3P)

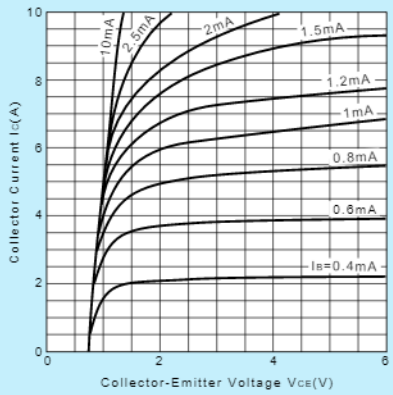


Weight : Approx 2.0g
a. Type No.
b. Lot No.

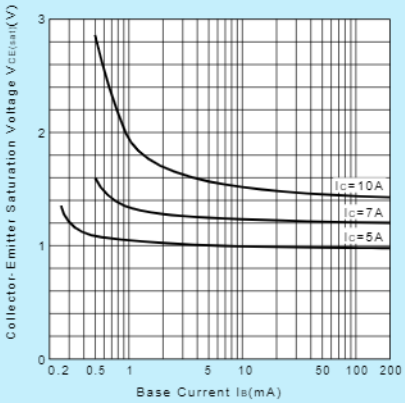
■Typical Switching Characteristics (Common Emitter)

V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (mA)	I_{B2} (mA)	ton (μs)	tstg (μs)	tf (μs)
70	10	7	10	−5	7	−7	0.5typ	10.0typ	1.1typ

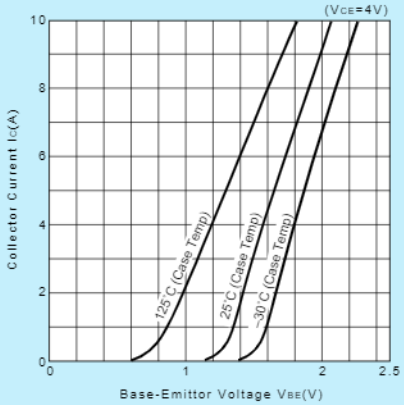
I_C−V_{CE} Characteristics (Typical)



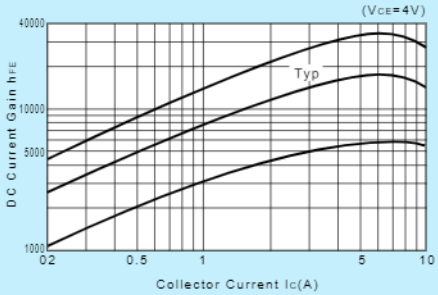
$V_{CE(sat)}$−I_B Characteristics (Typical)



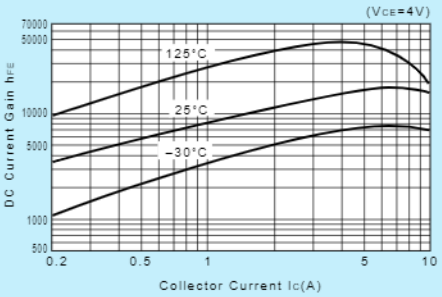
I_C−V_{BE} Temperature Characteristics (Typical)



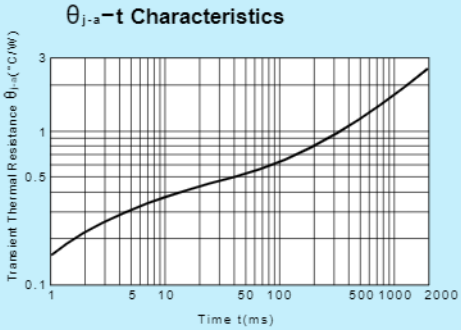
h_{FE}−I_C Characteristics (Typical)



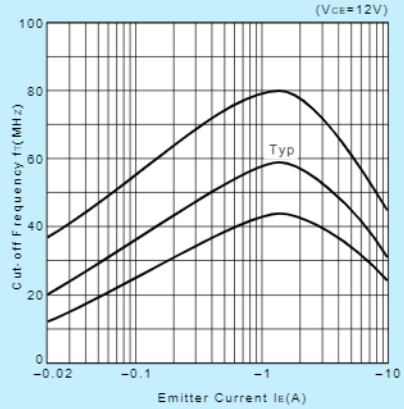
h_{FE}−I_C Temperature Characteristics (Typical)



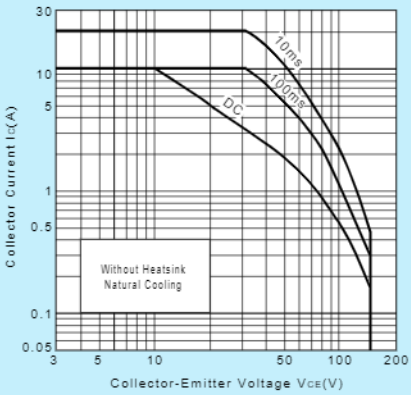
$\theta_{j\text{-}a}$−t Characteristics



f_T−I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



Pc−Ta Derating

