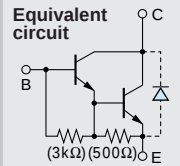




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Silicon NPN Triple Diffused Planar Transistor

Application : Driver for Solenoid, Relay and Motor and General Purpose

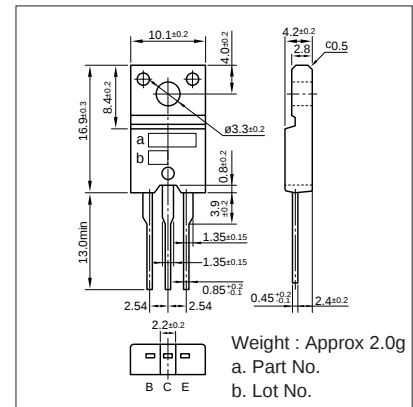
■Absolute maximum ratings (Ta=25°C)

Symbol	Ratings	Unit
VCBO	150	V
VCEO	120	V
VEBO	6	V
IC	4	A
IB	0.5	A
PC	25(Tc=25°C)	W
Tj	150	°C
Tstg	-55 to +150	°C

■Electrical Characteristics (Ta=25°C)

Symbol	Conditions	Ratings	Unit
ICBO	V _{CB} =150V	10max	μA
IEBO	V _{EB} =6V	10max	mA
V(BR)CEO	I _C =10mA	120min	V
h _{FE}	V _{CE} =2V, I _C =2A	2000min	
V _{CE(sat)}	I _C =2A, I _B =2mA	1.5max	V
V _{BE(sat)}	I _C =2A, I _B =2mA	2.0max	V
f _r	V _{CE} =12V, I _E =-0.1A	40typ	MHz
COB	V _{CB} =10V, f=1MHz	40typ	pF

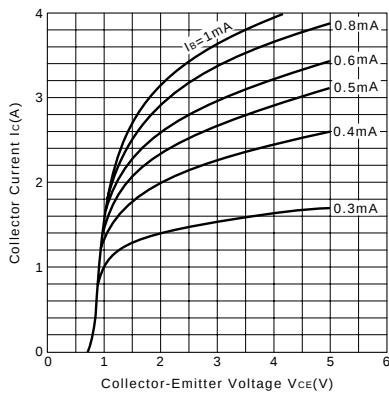
External Dimensions FM20(TO220F)



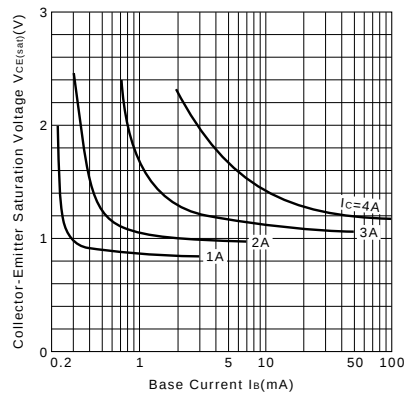
■Typical Switching Characteristics (Common Emitter)

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)
40	20	2	10	-5	10	-10	0.6typ	5.0typ	2.0typ

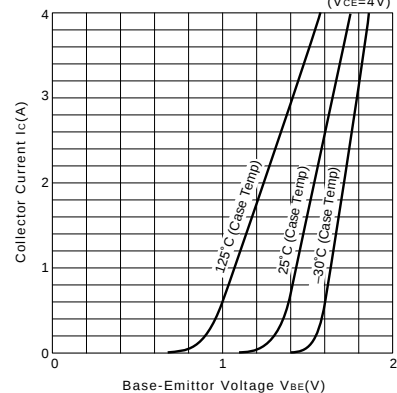
I_C-V_{CE} Characteristics (Typical)



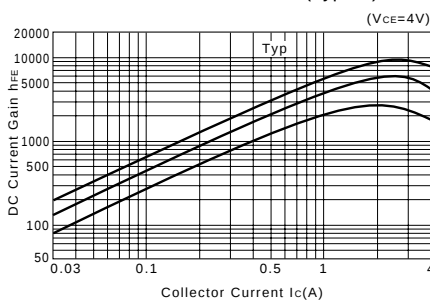
V_{CE(sat)}-I_B Characteristics (Typical)



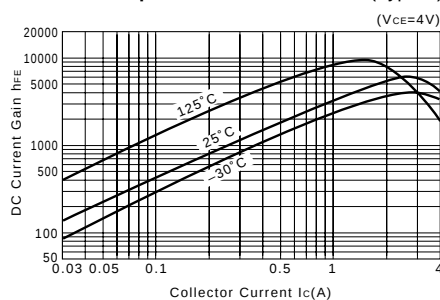
I_C-V_{BE} Temperature Characteristics (Typical)



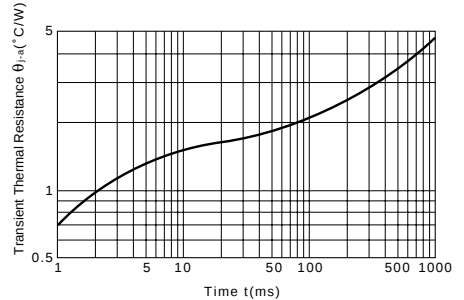
h_{FE}-I_C Characteristics (Typical)



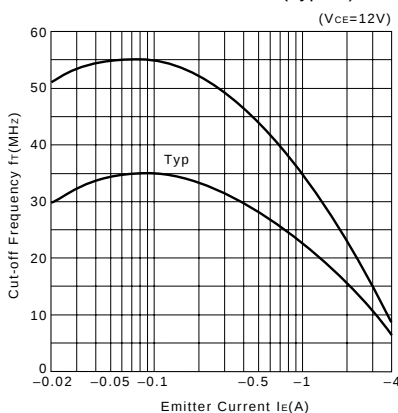
h_{FE}-I_C Temperature Characteristics (Typical)



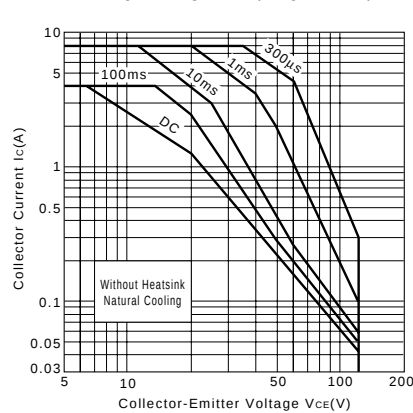
θ_{JA}-t Characteristics



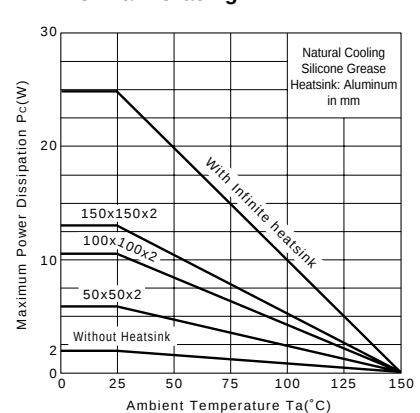
f_T-I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_C-T_a Derating



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