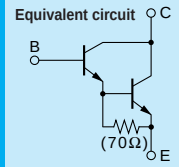


Darlington

2SD2438



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1587)

Application : Audio, Series Regulator and General Purpose

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

Symbol	2SD2438	Unit
V_{CB0}	160	V
V_{CE0}	150	V
V_{EB0}	5	V
I_C	8	A
I_B	1	A
P_C	75($T_c=25^\circ\text{C}$)	W
T_j	150	$^\circ\text{C}$
T_{stg}	-55 to +150	$^\circ\text{C}$

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

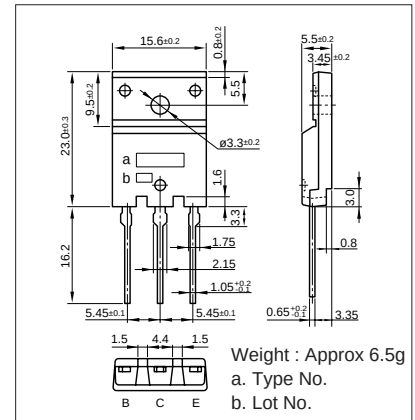
Symbol	Conditions	2SD2438	Unit
I_{CBO}	$V_{CB}=160\text{V}$	100max	μA
I_{EBO}	$V_{EB}=5\text{V}$	100max	μA
$V_{(BR)CEO}$	$I_C=30\text{mA}$	150min	V
h_{FE}	$V_{CE}=4\text{V}$, $I_C=6\text{A}$	5000min*	
$V_{CE(sat)}$	$I_C=6\text{A}$, $I_B=6\text{mA}$	2.5max	V
$V_{BE(sat)}$	$I_C=6\text{A}$, $I_B=6\text{mA}$	3.0max	V
f_T	$V_{CE}=12\text{V}$, $I_E=-1\text{A}$	80typ	MHz
C_{OB}	$V_{CB}=10\text{V}$, $f=1\text{MHz}$	85typ	pF

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

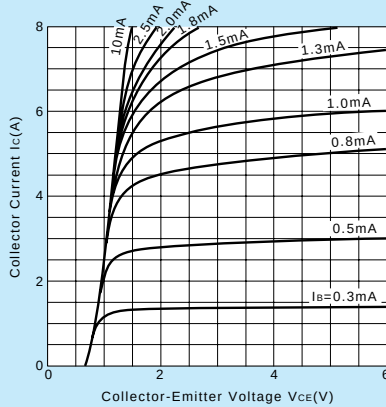
Typical Switching Characteristics (Common Emitter)

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)
60	10	6	10	-2	6	-6	0.6typ	10.0typ	0.9typ

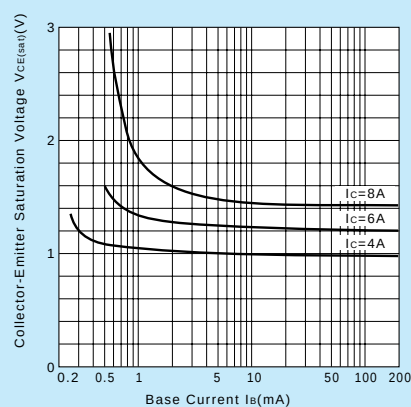
External Dimensions FM100(TO3PF)



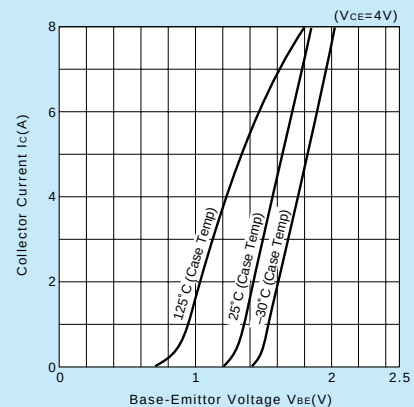
I_C-V_{CE} Characteristics (Typical)



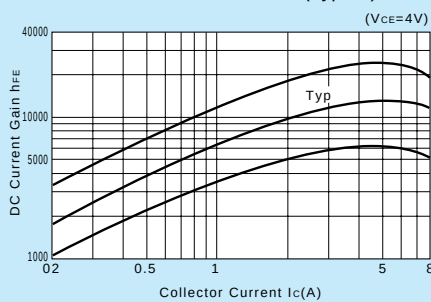
$V_{CE(sat)}-I_B$ Characteristics (Typical)



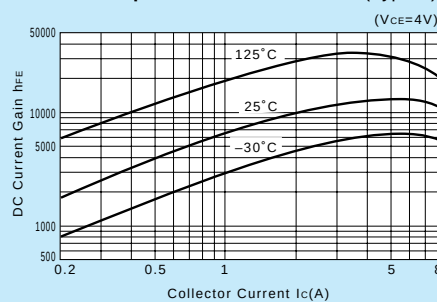
I_C-V_{BE} Temperature Characteristics (Typical)



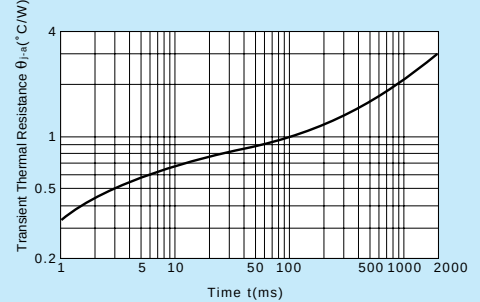
$h_{FE}-I_C$ Characteristics (Typical)



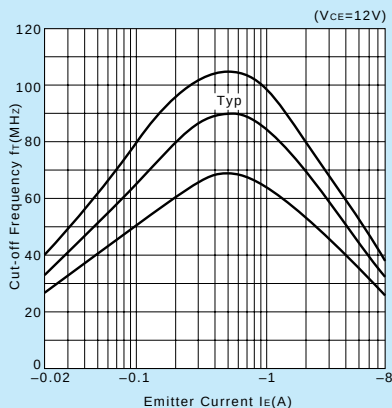
$h_{FE}-I_C$ Temperature Characteristics (Typical)



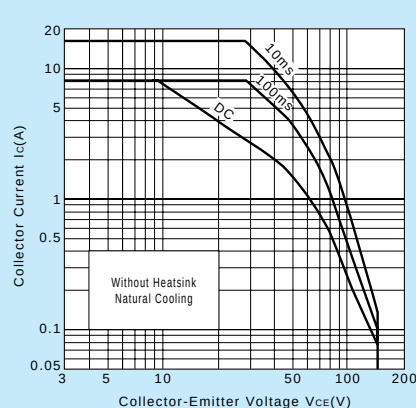
$\theta_{j-a}-t$ Characteristics



f_T-I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_C-T_a Derating

