

# 2SD2083

## Silicon NPN Triple Diffused Planar

☆Darlington ☆Complement to type 2SB1383

### Application Example:

Driver for Solenoid, Relay and Motor, and General Purpose

● Outline Drawing 2 ... MT-100(TO3P)

### Absolute Maximum Ratings

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

Symbol	2SD2083	Unit
$V_{CB0}$	120	V
$V_{CE0}$	120	V
$V_{EB0}$	6	V
$I_C$	25 (Pulse 40)	A
$I_B$	2	A
$P_C$	120 ( $T_C=25^\circ\text{C}$ )	W
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-55~+150	$^\circ\text{C}$

### Electrical Characteristics

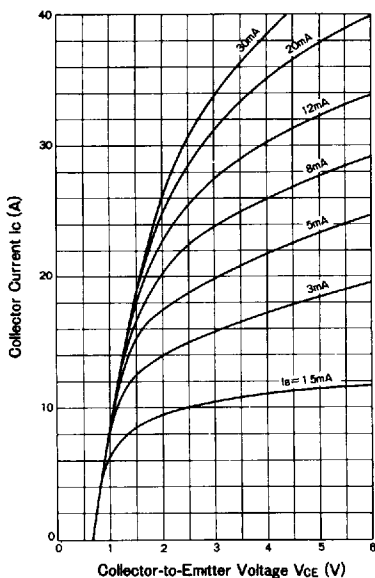
( $T_a=25^\circ\text{C}$ )

Symbol	Conditions	2SD2083	Unit
$I_{CBO}$	$V_{CB}=120\text{V}$	10max	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=6\text{V}$	10max	mA
$V_{(BR)CEO}$	$I_C=25\text{mA}$	120min	V
$h_{FE}$	$V_{CE}=4\text{V}, I_C=12\text{A}$	2000min	
$V_{CE(sat)}$	$I_C=12\text{A}, I_B=24\text{mA}$	1.8max	V
$V_{BE(sat)}$	$I_C=12\text{A}, I_B=24\text{mA}$	2.5max	V

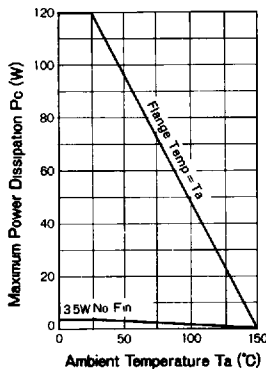
### Typical Switching Characteristics (Common Emitter)

$V_{CC}$ (V)	$R_L$ ( $\Omega$ )	$I_C$ (A)	$V_{BE1}$ (V)	$V_{BE2}$ (V)	$I_{B1}$ (A)	$I_{B2}$ (A)	$t_{on}$ ( $\mu\text{s}$ )	$t_{stg}$ ( $\mu\text{s}$ )	$t_r$ ( $\mu\text{s}$ )
24	2	12	10	-5	24	-24	1.0typ	6.0typ	1.0typ

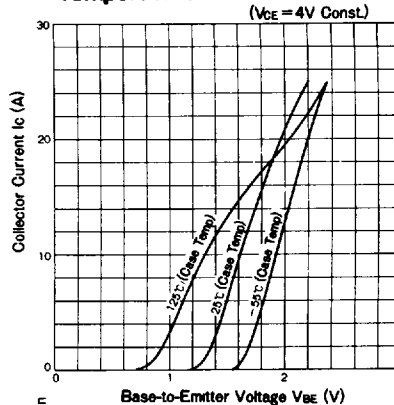
$I_C$ - $V_{CE}$  Characteristics (Typical Value)



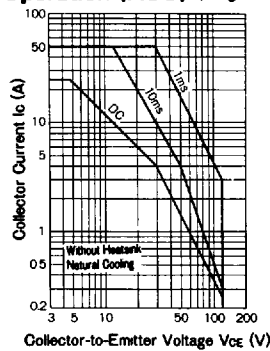
Power Derating



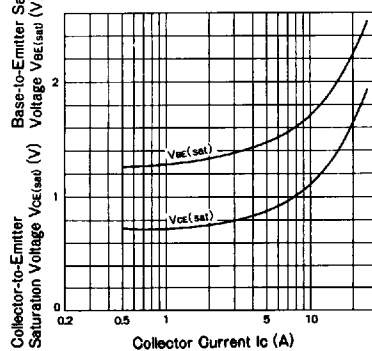
Temperature Characteristics



Maximum Areas For Safe Operation (ASO) (Single Pulse)

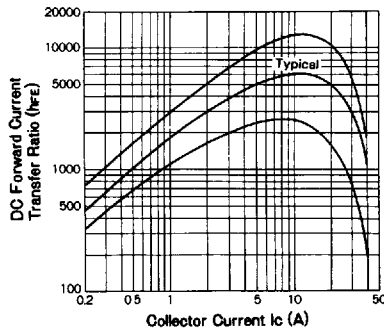


$V_{CE(sat)} \cdot V_{CE(sat)} - I_C$  Characteristics (Typical Value)

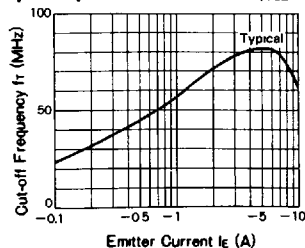


DC Current Gain Characteristics

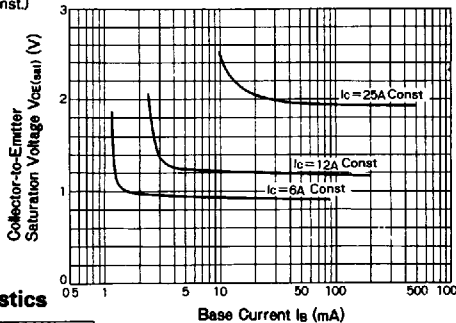
( $V_{CE} = 4\text{V Const.}$ )



Frequency Characteristics ( $V_{CE} = 12\text{V Const.}$ )

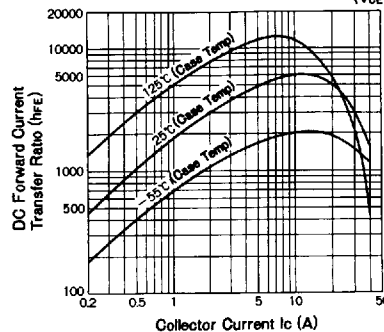


$V_{CE(sat)} - I_B$  Characteristics (Typical Value)

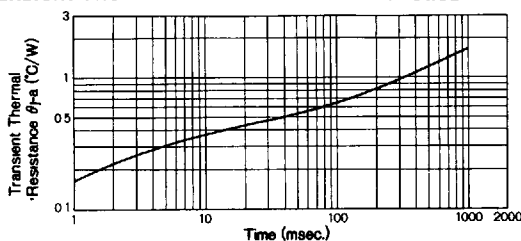


DC Current Gain Temperature Characteristics

( $V_{CE} = 4\text{V Const.}$ )



Transient Thermal Resistance Characteristics



T-91-20

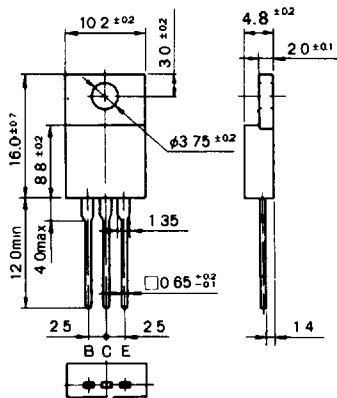
# Outline Drawings/Accessories

## Outline Drawing

- Nonflammability: UL94V-0 or equivalent
- Unit: in mm

### Outline Drawing 1

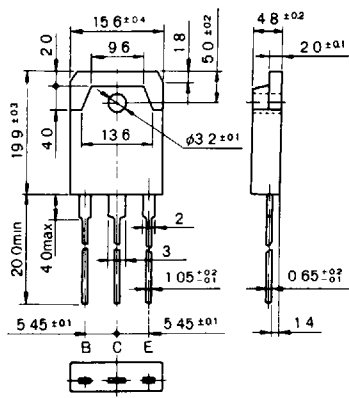
MT-25(T0220)



Weight: Approx. 2.6g

### Outline Drawing 2

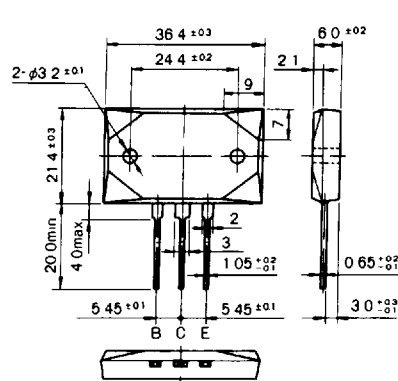
MT-100(T03P)



Weight: Approx. 6.0g

### Outline Drawing 3

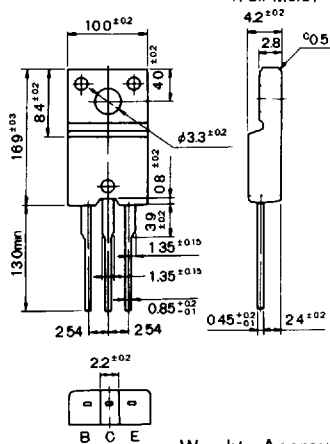
MT-200



Weight: Approx. 18.4g

### Outline Drawing 4

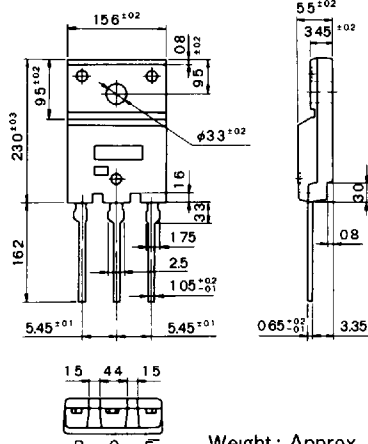
FM20  
(Full Mold)



Weight: Approx. 2.0g

### Outline Drawing 5

FM100  
(Full Mold)



Weight: Approx. 6.5g

## Accessories

☆Sanken Transistors do not include accessories. Accessories may be attached at a cost if requested.

☆Sanken transistor case is a standard size, and can replace any generally sold product.

- Heatsink: Mica, with a thickness of 0.06 mm, +0.045 -0.005 allowance

- Insulation Bush for MT-25(T0220)

Type Name: Molded (10) Mica    Type Name: Molded (14) Mica    Type Name: Molded (9) Mica

