

# 2SA1643

## Silicon PNP Epitaxial Planar

☆ Low  $V_{CE(sat)}$  Transistor ☆ Complement to type 2SC4327

### Application Example:

Video Cam Adaptor, DC Motor Driver and General Purpose

● Outline Drawing 4 ..... FM20

### Absolute Maximum Ratings

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

Symbol	2SA1643	Unit
$V_{CBO}$	-50	V
$V_{CEO}$	-35	V
$V_{EBO}$	-6	V
$I_C$	-7 (Pulse -12)	A
$I_B$	-1	A
$P_C$	25 ( $T_C = 25^\circ\text{C}$ )	W
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-55~+150	$^\circ\text{C}$

### Electrical Characteristics

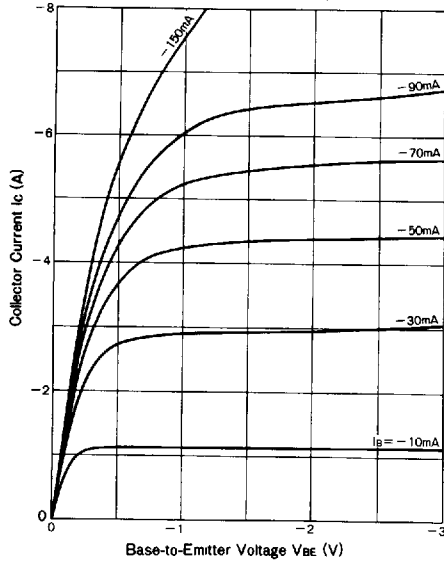
( $T_a=25^\circ\text{C}$ )

Symbol	Conditions	2SA1643	Unit
$I_{CBO}$	$V_{CB}=-50\text{V}$	-10max	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=-6\text{V}$	-10max	$\mu\text{A}$
$V_{(BR)CEO}$	$I_C = -10\text{mA}$	-35min	V
$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-5\text{A}$	50min	
$V_{CE(sat)}$	$I_C = -5\text{A}$ , $I_B = -0.3\text{A}$	-0.5max	V
$f_T$	$V_{CE}=-12\text{V}$ , $I_E=1\text{A}$	75typ	MHz

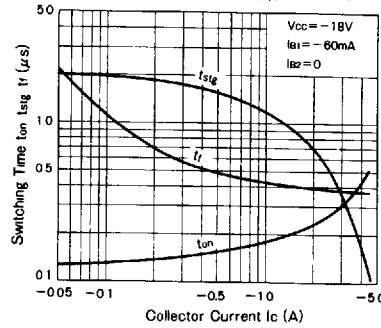
### Typical Switching Characteristics (Common Emitter)

$V_{CC}$ (V)	$R_L$ ( $\Omega$ )	$I_C$ (A)	$V_{BB1}$ (V)	$V_{BB2}$ (V)	$I_{B1}$ (A)	$I_{B2}$ (A)	$t_{on}$ ( $\mu\text{s}$ )	$t_{stg}$ ( $\mu\text{s}$ )	$t_r$ ( $\mu\text{s}$ )
-18	6	-3	-10	0	-60	0	0.3typ	0.4typ	0.4typ

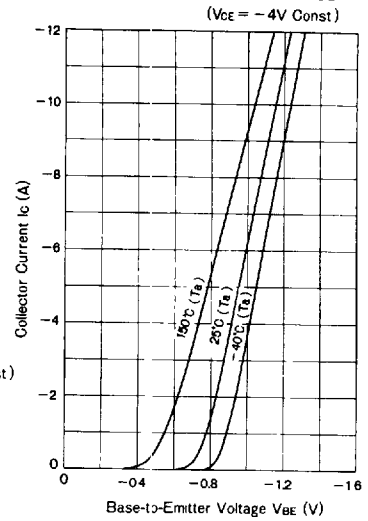
$I_C - V_{CE}$  Characteristics (Typical Value)



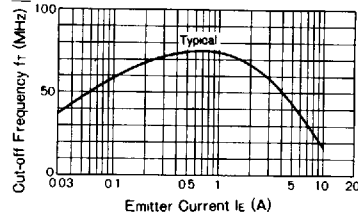
$t_{on} \cdot t_{stg} \cdot t_r - I_C$  Characteristics (Typical Value)



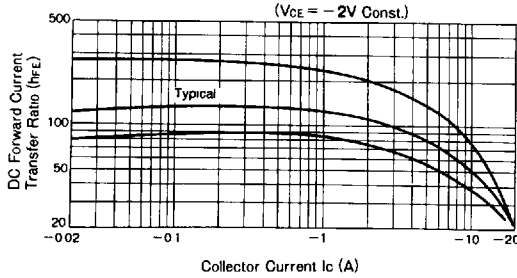
Temperature Characteristics



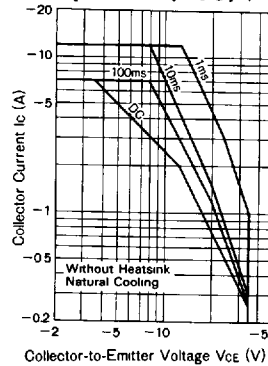
Frequency Characteristics ( $V_{CE} = 12\text{V}$  Const)



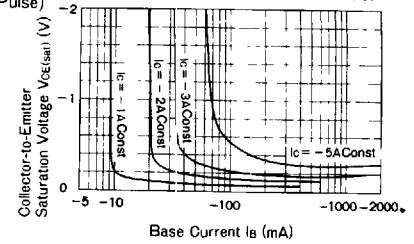
DC Current Gain Characteristics



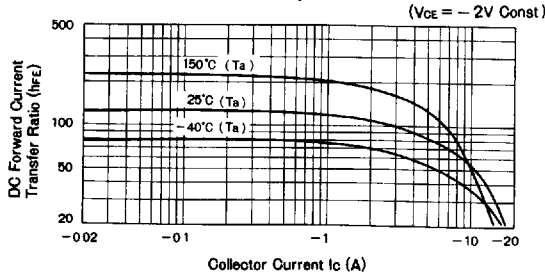
Maximum Areas For Safe Operation (ASO) (Single Pulse)



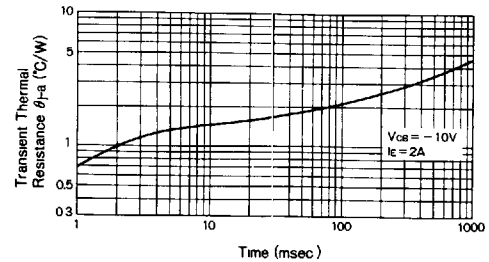
$V_{CE(sat)} - I_B$  Characteristics (Typical Value)



DC Current Gain Temperature Characteristics



Transient Thermal Resistance Characteristics



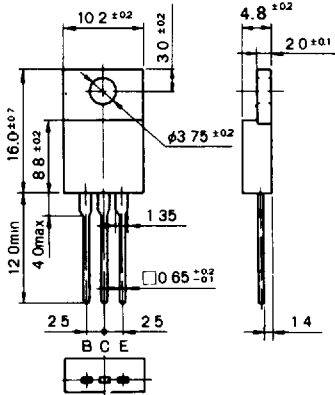
# Outline Drawings/Accessories

## Outline Drawing

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

### Outline Drawing 1

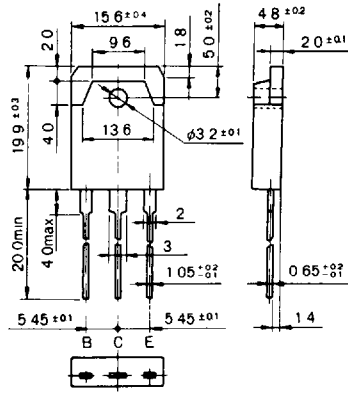
MT-25(TO220)



Weight: Approx. 2.6 g

### Outline Drawing 2

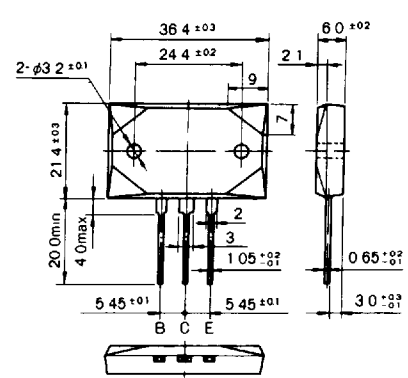
MT-100(TO3P)



Weight: Approx. 6.0 g

### Outline Drawing 3

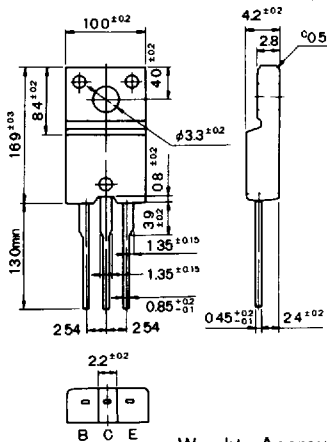
MT-200



Weight: Approx. 18.4 g

### Outline Drawing 4

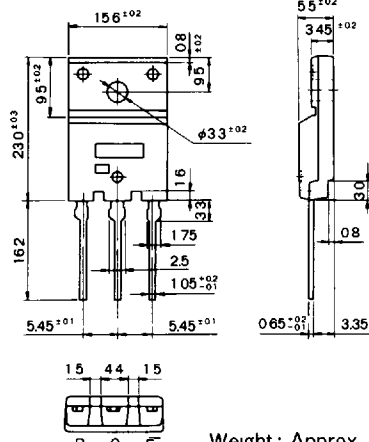
FM20  
(Full Mold)



Weight: Approx. 2.0 g

### Outline Drawing 5

FM100  
(Full Mold)



Weight: Approx. 6.5 g

## 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 (TO220)

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

