

# 2SC3520

## Silicon NPN Triple Diffused Planar

☆High Voltage Switching Transistor

**Application Example :**  
Switching Regulator and  
General Purpose

● Outline Drawing 2 ..... MT-100(TO3P)

### Absolute Maximum Ratings

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

Symbol	2SC3520	Unit
$V_{CB0}$	500	V
$V_{CEO}$	400	V
$V_{EBO}$	10	V
$I_C$	18 (Pulse 36)	A
$I_B$	6	A
$P_C$	130 ( $T_c = 25^\circ\text{C}$ )	W
$T_j$	150	$^\circ\text{C}$
$T_{stg}$	-55~+150	$^\circ\text{C}$

### Electrical Characteristics

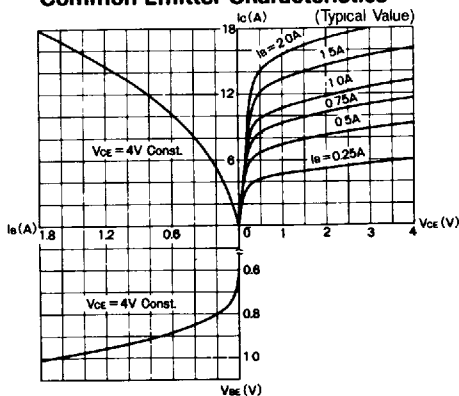
( $T_a=25^\circ\text{C}$ )

Symbol	Conditions	2SC3520	Unit
$I_{CBO}$	$V_{CB}=500\text{V}$	100max	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=10\text{V}$	100max	$\mu\text{A}$
$V_{(BR)CEO}$	$I_C = 25\text{mA}$	400min	V
$h_{FE}$	$V_{CE}=4\text{V}$ , $I_C=10\text{A}$	10min	
$V_{CE(sat)}$	$I_C = 10\text{A}$ , $I_B=2\text{A}$	0.5max	V
$V_{BE(sat)}$	$I_C = 10\text{A}$ , $I_B=2\text{A}$	1.3typ	V
$f_T$	$V_{CE}=12\text{V}$ , $I_E=-2\text{A}$	18typ	MHz

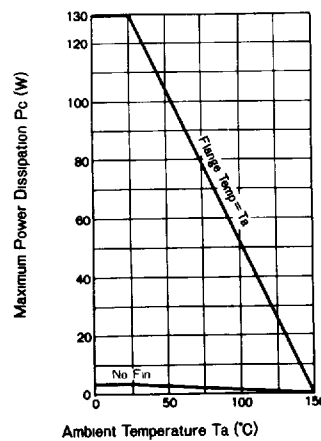
### Typical Switching Characteristics (Common Emitter)

$V_{CC}$ (V)	$R_L$ ( $\Omega$ )	$I_C$ (A)	$V_{BB1}$ (V)	$V_{BB2}$ (V)	$I_{B1}$ (A)	$I_{B2}$ (A)	$t_{on}$ ( $\mu\text{s}$ )	$t_{stg}$ ( $\mu\text{s}$ )	$t_r$ ( $\mu\text{s}$ )
100	10	10	10	-5	2	-2	0.7max	3.0max	0.7max

### Common Emitter Characteristics

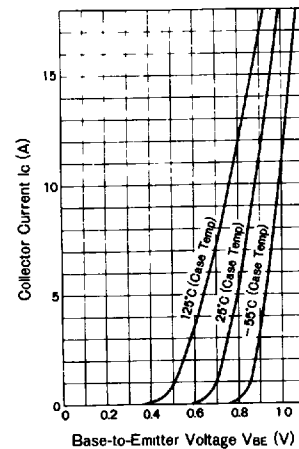


### Power Derating



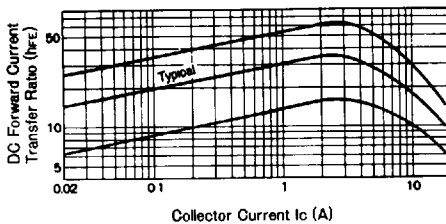
### Temperature Characteristics

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

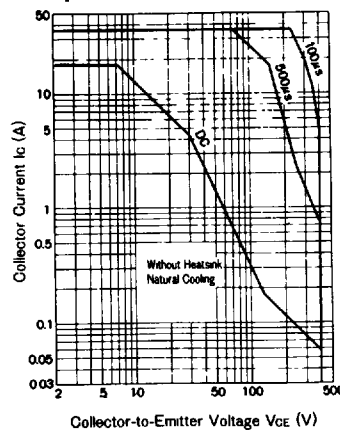


### DC Current Gain Characteristics

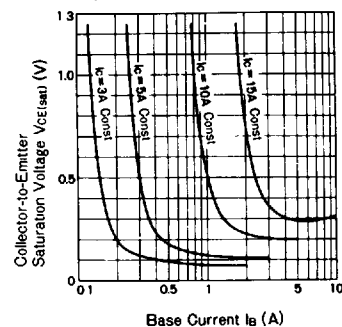
( $V_{CE} = 4\text{V Const.}$ )



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

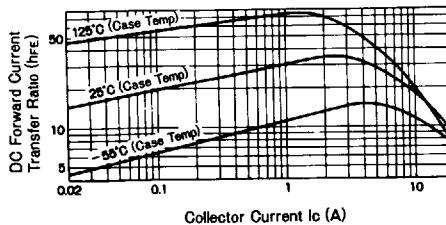


### $V_{CE(sat)} - I_B$ Characteristics (Typical Value)



### DC Current Gain Temperature Characteristics

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



### Transient Thermal Resistance Characteristics

