

# 2SD1516

## Silicon NPN Epitaxial Planar Type

Power Amplifier, Power Switching

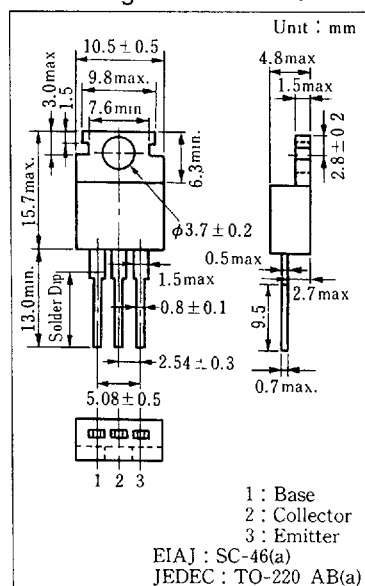
### ■ Features

- Low collector-emitter saturation voltage ( $V_{CE(sat)}$ )
- Good linearity of DC current gain ( $h_{FE}$ )
- High collector current ( $I_C$ )
- High speed switching

### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CBO}$	130	V
Collector-emitter voltage	$V_{CEO}$	80	V
Emitter-base voltage	$V_{EBO}$	7	V
Peak collector current	$I_{CP}$	5	A
Collector current	$I_C$	2	A
Collector power dissipation	$P_C$	$T_c=25^\circ\text{C}$	25
		$T_a=25^\circ\text{C}$	1.4
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

### ■ Package Dimensions

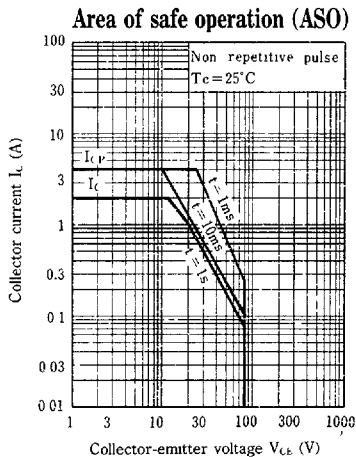
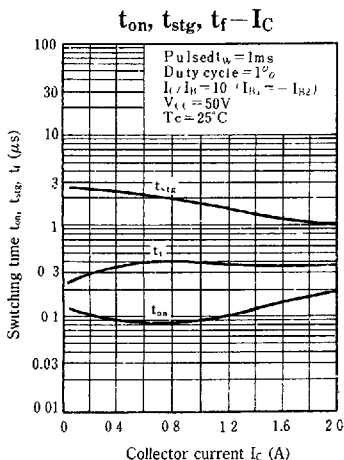
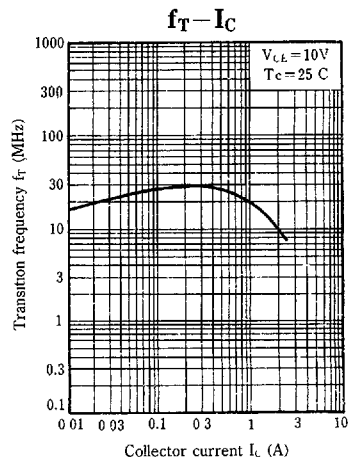
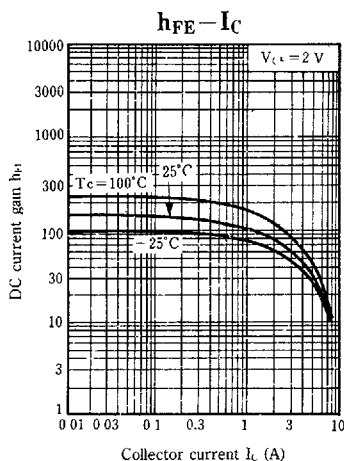
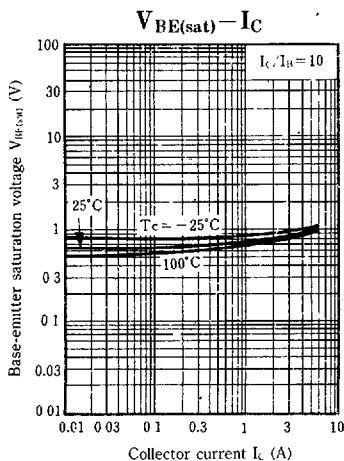
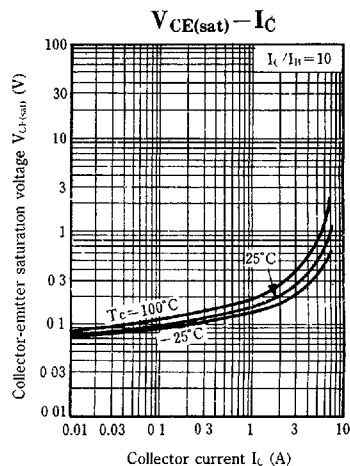
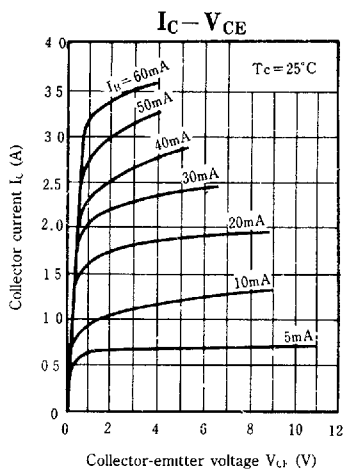
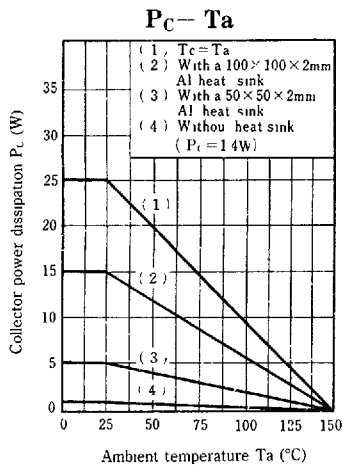


### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB}=100\text{V}, I_E=0$			10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			50	$\mu\text{A}$
Collector-emitter voltage	$V_{CEO}$	$I_C=10\text{mA}, I_B=0$	80			V
DC current gain	$h_{FE1}^*$	$V_{CE}=2\text{V}, I_C=0.1\text{A}$	45			
	$h_{FE2}$	$V_{CE}=2\text{V}, I_C=0.5\text{A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.1\text{A}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=0.1\text{A}$			1.5	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=10\text{MHz}$		25		MHz
Turn-on time	$t_{on}$	$I_C=0.5\text{A}, I_{B1}=50\text{mA}, I_{B2}=-50\text{mA}$ $V_{CC}=50\text{V}$		0.1		$\mu\text{s}$
Storage time	$t_{stg}$			2.5		$\mu\text{s}$
Fall time	$t_f$			0.3		$\mu\text{s}$

### \* $h_{FE1}$ Classifications

Class	R	Q	P
$h_{FE1}$	60~120	90~180	130~260



Note) Refer to P.860 (on 2SD1770/A) for  $R_{th(\theta)}$ -t characteristics

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