

# 2SD1640

## Silicon NPN Epitaxial Planar Darlington Type

### AF Output Amplifier

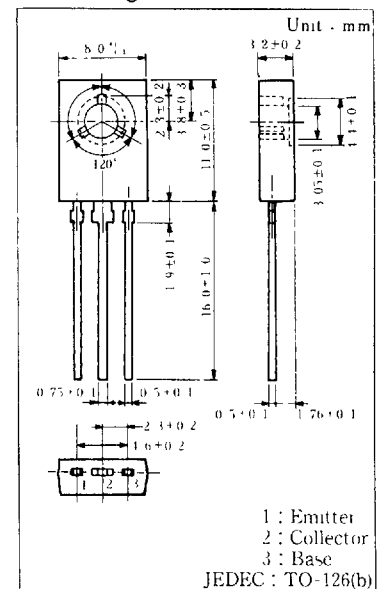
#### ■ Features

- Darlington connection
- High DC current gain ( $h_{FE}$ )
- High collector current ( $I_C$ )
- High collector-emitter voltage ( $V_{CE0}$ )

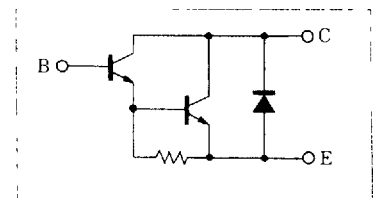
#### ■ Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CB0}$	120	V
Collector-emitter voltage	$V_{CE0}$	100	V
Emitter-base voltage	$V_{EB0}$	5	V
Peak collector current	$I_{CP}$	3	A
Collector current	$I_C$	2	A
Collector power dissipation	$P_C$	1.2	W
Junction temperature	$T_J$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

#### ■ Package Dimensions



#### ■ Inner Circuit



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

Item	Symbol	Condition	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 25\text{ V}, I_B = 0$			0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4\text{ V}, I_C = 0$			1	$\mu\text{A}$
Collector-base voltage	$V_{CB0}$	$I_C = 100\ \mu\text{A}, I_B = 0$	120			V
Collector-emitter voltage	$V_{CE0}$	$I_C = 1\text{ mA}, I_B = 0$	100			V
Emitter-base voltage	$V_{EB0}$	$I_1 = 100\ \mu\text{A}, I_C = 0$	5			V
DC current gain	$h_{FE}^{*1}$	$V_{CE} = 10\text{ V}, I_C = 1\text{ A}^{*2}$	4000		40000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}^{*2}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}^{*2}$			2	V
Transition frequency	$f_T$	$V_{CB} = 10\text{ V}, I_B = -50\text{ mA}, f = 200\text{ MHz}$		150		MHz

\*1ハリス測定

#### \*1 $h_{FE}$ Classifications

Class	Q	R	S
$h_{FE}$	4000 ~ 10000	8000 ~ 20000	16000 ~ 40000

6932852 0016782 78T

