

# 2SC3850

## Silicon PNP Triple-Diffused Planar Type

### Power Switching

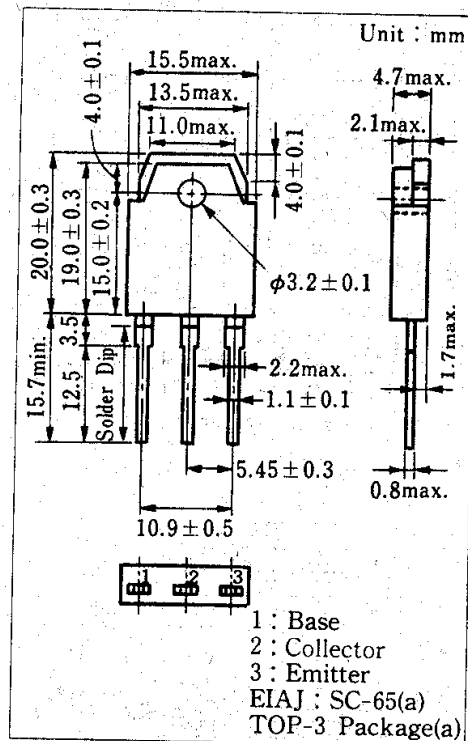
#### ■ Features

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

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

Item	Symbol	Value	Unit	
Collector-base voltage	$V_{CB0}$	500	V	
Collector-emitter voltage	$V_{CES}$	500	V	
Collector-emitter voltage	$V_{CEO}$	400	V	
Emitter-base voltage	$V_{EBO}$	7	V	
Peak collector current	$I_{CP}$	30	A	
Collector current	$I_C$	20	A	
Base current	$I_B$	6	A	
Collector power dissipation	$P_C$	$T_c=25^\circ\text{C}$	125	W
		$T_a=25^\circ\text{C}$	2.5	
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	$I_{CBO}$	$V_{CB}=500\text{V}, I_E=0$			100	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=7\text{V}, I_C=0$			100	$\mu\text{A}$
Collector-emitter voltage	$V_{CEO(sus)^*}$	$I_C=0.5\text{A}, L=25\text{mH}$	400			V
DC current gain	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=2\text{A}$	15			
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=10\text{A}$	10			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{A}, I_B=2\text{A}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{A}, I_B=2\text{A}$			1.5	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=1\text{A}, f=1\text{MHz}$		15		MHz
Turn-on time	$t_{on}$	$I_C=10\text{A}$			1	$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1}=2.0\text{A}, I_{B2}=-2.0\text{A}$			2.5	$\mu\text{s}$
Collector current fall time	$t_f$	$V_{CC}=125\text{V}$			1	$\mu\text{s}$

#### $V_{CEO(sus)}$ Test method

