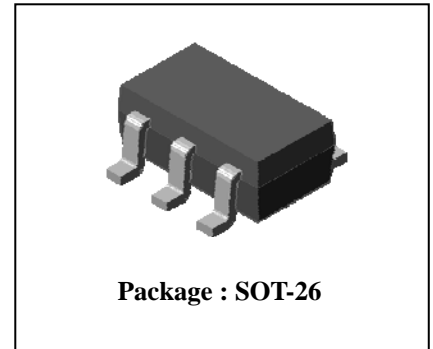


## Descriptions

- Complex type bipolar transistor

## Features

- Reduce quantity of parts and mounting cost
- High collector power dissipation :  $P_C=300\text{mW}(\text{Max.})$
- 2 NPN+PNP Chips in SOT-26 PKG

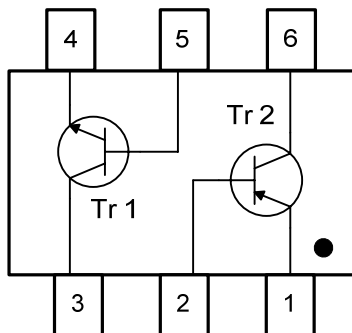


## Ordering Information

Type NO.	Marking	Package Code
SUT465N	5N◇□	SOT-26

◇ : Hfe rank, □ : Year & Week Code

## PIN Assignment & Description



[Pin Assignment]

Pin	Description
1	Emitter 2
2	Base 2
3	Collector 1
4	Emitter 1
5	Base 1
6	Collector 2

## Absolute Maximum Ratings [Tr1, Tr2]

Characteristic	Symbol	Ratings		Unit
		Tr1	Tr2	
Collector-Base voltage	$V_{CB0}$	75	-60	V
Collector-Emitter voltage	$V_{CEO}$	40	-40	V
Emitter-Base voltage	$V_{EBO}$	5	-5	V
Collector current	$I_C$	600	-600	mA(DC)
	$I_{CP}^*$	1.2	-1.2	A(AC)
Collector power dissipation	$P_C^{**}$	300		mW
Junction temperature	$T_J$	150		°C
Storage temperature	$T_{stg}$	-55~150		°C

\* : Single pulse,  $t_p=300\ \mu\text{s}$

\*\* : Total rating(Each terminal mounted on a recommended solder land)

## Electrical Characteristics [ Tr1 ]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C=10\mu A, I_E=0$	75	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C=1mA, I_B=0$	40	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=75V, I_E=0$	-	-	20	nA
DC current gain	$h_{FE}$	$V_{CE}=10V, I_C=10mA$	100	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=150mA, I_B=15mA$	-	-	0.4	V
Transition frequency	$f_T$	$V_{CE}=20V, I_C=20mA,$ $f=100MHz$	250	-	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	-	8	pF
Delay time	$t_d$	$V_{CC}=30V_{dcr}, V_{BE(off)}=0.5V_{dcr},$ $I_C=150mA_{dcr}, I_{B1}=15mA_{dc}$	-	-	10	ns
Rise time	$t_r$		-	-	25	ns
Storage time	$t_s$		-	-	225	ns
Fall Time	$t_f$	$I_{B1}=I_{B2}=15mA_{dc}$	-	-	60	ns

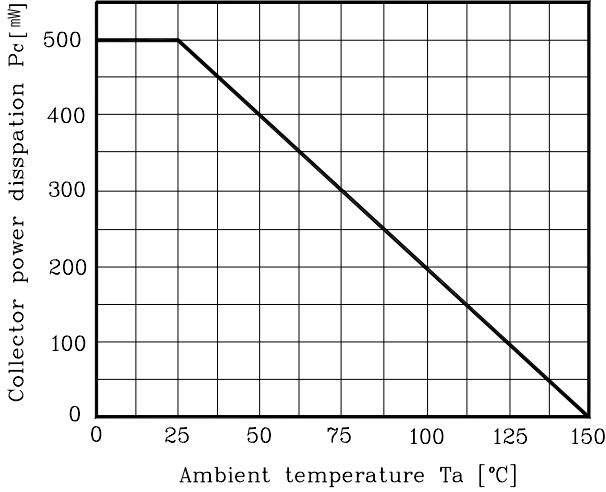
## Electrical Characteristics [ Tr2 ]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C=-10\mu A, I_E=0$	-60	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C=-1mA, I_B=0$	-40	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E=-10\mu A, I_C=0$	-5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-40V, I_E=0$	-	-	-20	nA
DC current gain	$h_{FE}$	$V_{CE}=-10V, I_C=-10mA$	100	-	-	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=-150mA, I_B=-15mA$	-	-	-0.4	V
Transition frequency	$f_T$	$V_{CE}=-5.0V, I_C=-20mA,$ $f=100MHz$	200	-	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0, f=1MHz$	-	-	8	pF
Turn-on time	$t_{on}$	$V_{CC}=-30V_{dcr}, I_C=-150mA_{dcr},$ $I_{B1}=-15mA_{dc}$	-	-	45	ns
Delay time	$t_d$		-	-	10	ns
Rise time	$t_r$		-	-	40	ns
Turn-off time	$t_{off}$	$V_{CC}=-6.0V_{dcr}, I_C=-150mA_{dcr},$ $I_{B1}=I_{B2}=-15mA_{dc}$	-	-	100	ns
Storage time	$t_s$		-	-	80	ns
Fall time	$t_f$		-	-	30	ns

Electrical Characteristic Curves

Fig. 1  $P_c \cdot T_a$



[ Tr1 ]

Fig. 2  $h_{FE} \cdot I_C$

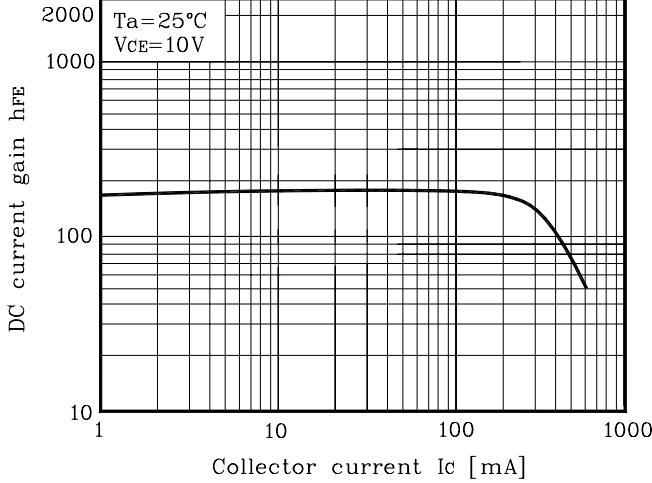


Fig. 3  $V_{CE(sat)} \cdot I_C$

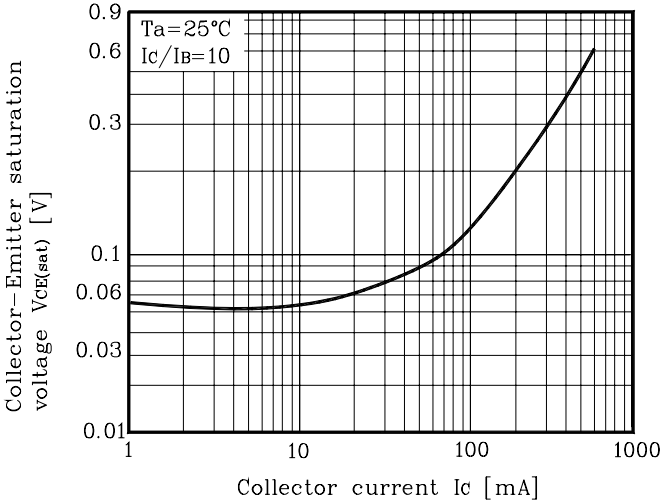
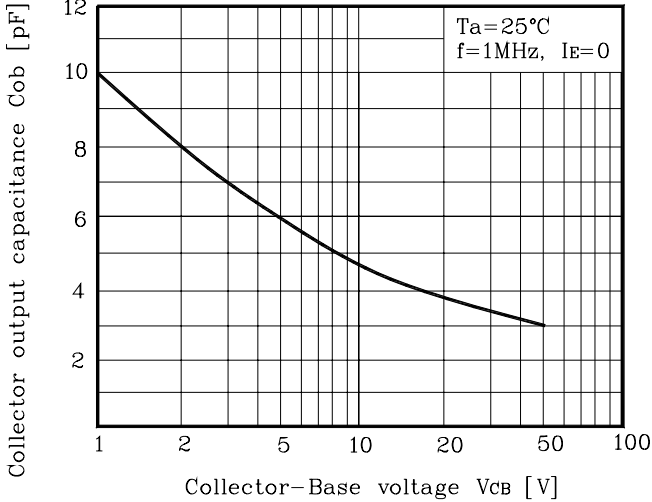


Fig. 4  $C_{ob} \cdot V_{CB}$



[ Tr2 ]

Fig. 5  $h_{FE} \cdot I_C$

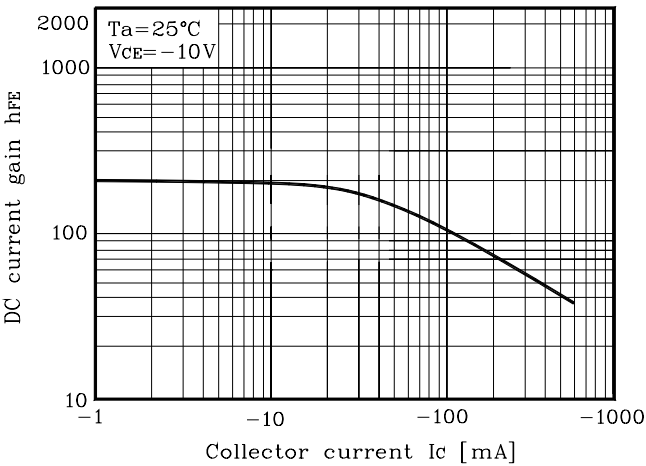
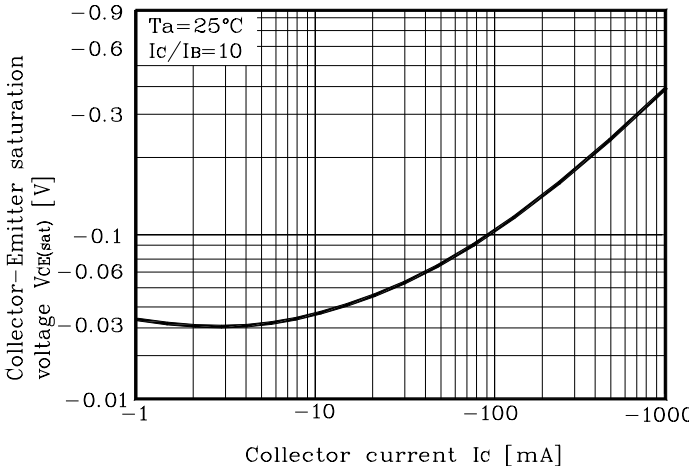
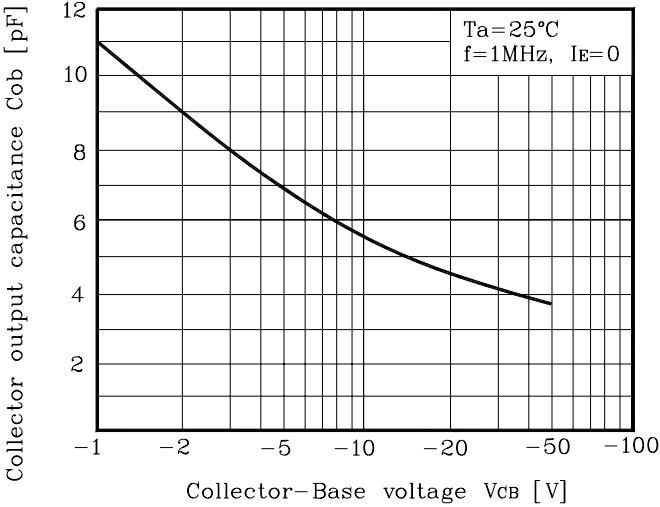


Fig. 6  $V_{CE(sat)} \cdot I_C$

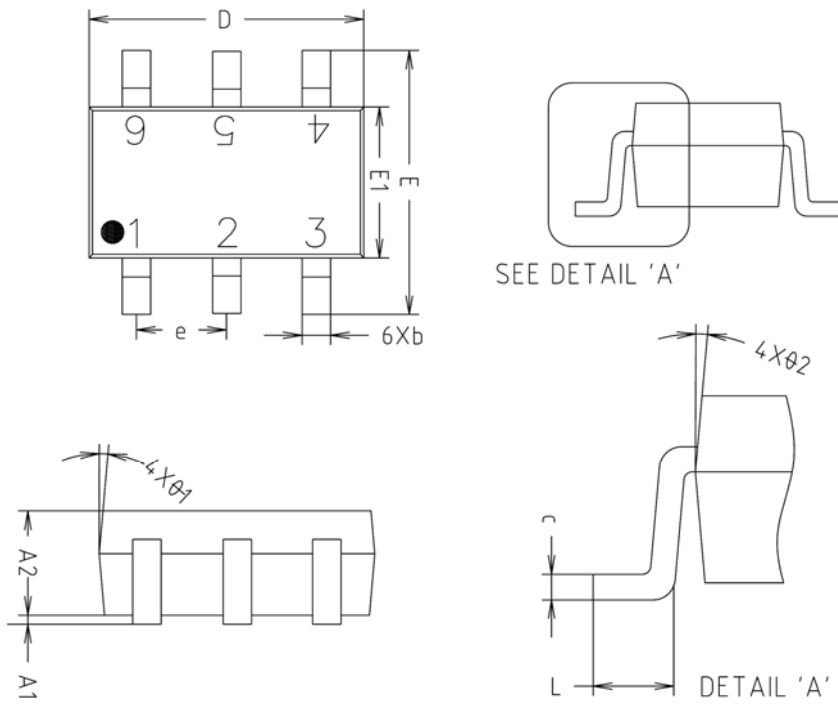


Electrical Characteristic Curves

Fig. 7  $C_{ob}-V_{CB}$

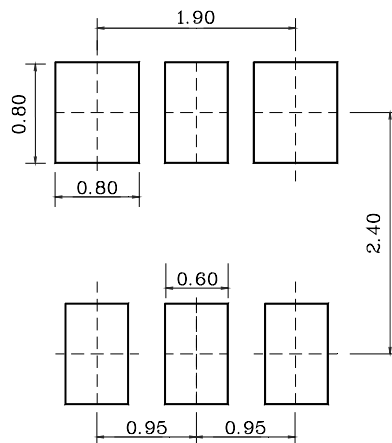


SOT-26 Outline Dimension(mm)



SYMBOL	MILLIMETERS(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.000	0.050	0.100	
A2	1.000	1.100	1.200	
b	-	0.400	0.450	
c	0.110	0.150	0.190	
D	2.800	2.900	3.000	
E	2.600	2.800	3.000	
E1	1.500	1.600	1.700	
e	0.930	0.950	0.970	
L	0.400	-	-	
Ø1	5° REF			
Ø2	5° REF			

※ Recommend PCB solder land [Unit: mm]



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