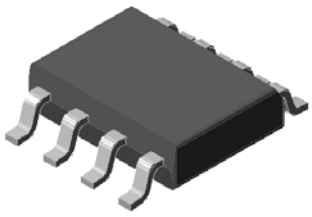
KODENSHI AUK

SUT290

Dual NPN-PNP complementary Bipolar transistor

Features

- Low VCE(sat)=0.5V (Typ.)
- Simplified circuit design
- Reduced component count

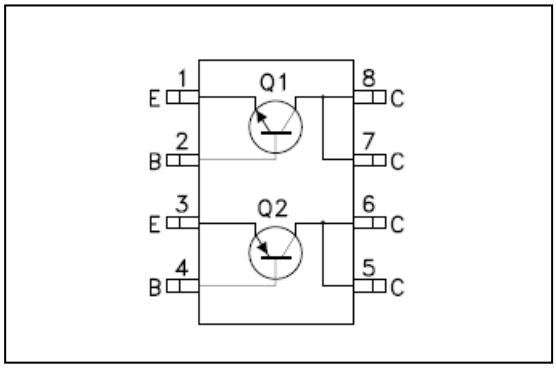


SOP-8

Applications

- Push-Pull or Totem-Pole configuration
- MOSFET and IGBT gate driving
- Motor, relay and solenoid driving

Internal schematic diagram



Description

The SUT290 is a Hybrid dual NPN-PNP complementary power bipolar transistor manufactured by using the latest low voltage planar technology. The SUT290 is housed in dual island SOP-8 package with separated terminals for higher assembly flexibility, specifically recommended to be used in Push-Pull or Totem Pole configuration as post IGBTs and MOSFETs driver.

Ordering Information

Type NO.	Marking	Package Code
SUT290	SUT290	SOP-8

Absolute Maximum Ratings

(Ta=25°C)

Characteristic	Symbol	Rating		Unit
		Tr1	Tr2	
Collector-base voltage	V_{CBO}	40	-40	V
Collector-emitter voltage	V_{CEO}	32	-32	V
Emitter-base voltage	V_{EBO}	5	-5	V
Collector current	I_C	2	-2	A
Power dissipation	P_D※	2		W/TOTAL
		1.4		W/ELEMENT
Junction temperature	T_J	150		°C
Storage temperature range	T_{stg}	-55~150		°C

※: When mounted on 40x40x0.8 ㎜ ceramic substrate

Electrical Characteristics [Tr1]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C=50uA, I_E=0	40	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C=1mA, I_B=0	32	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_C=50uA, I_C=0	5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=20V, I_E=0	-	-	1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0	-	-	1	μA
DC current gain	h_{FE}	V_{CE}=3V, I_C=0.5A	120	-	320	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=2A, I_B=200mA	-	0.5	0.8	V
Transition frequency	f_T	V_{CE}=5V, I_C=10mA	-	100	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	30	-	pF

Electrical Characteristics [Tr2]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C=-50uA, I_E=0	-40	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C=-1mA, I_B=0	-32	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_C=-50uA, I_C=0	-5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=-20V, I_E=0	-	-	-1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V, I_C=0	-	-	-1	μA
DC current gain	h_{FE}	V_{CE}=-3V, I_C=-0.1A	120	-	320	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-2A, I_B=-200mA	-	-0.5	-0.8	V
Transition frequency	f_T	V_{CE}=-5V, I_C=-500mA	-	150	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	50	-	pF

Electrical Characteristic Curves

[TR1]

Fig. 1 hFE - I_C

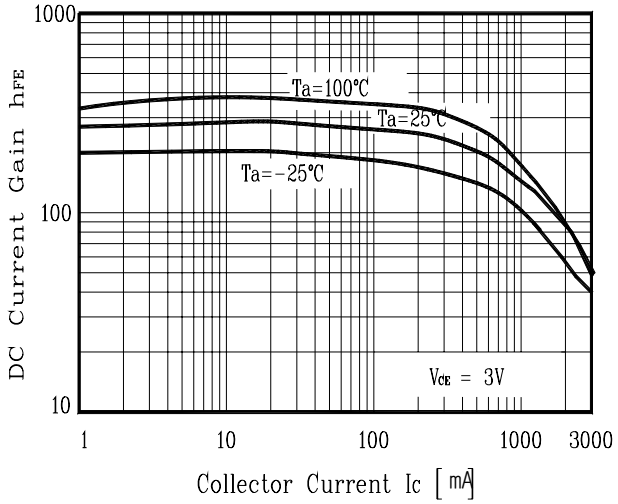


Fig. 2 I_C - V_{BE}

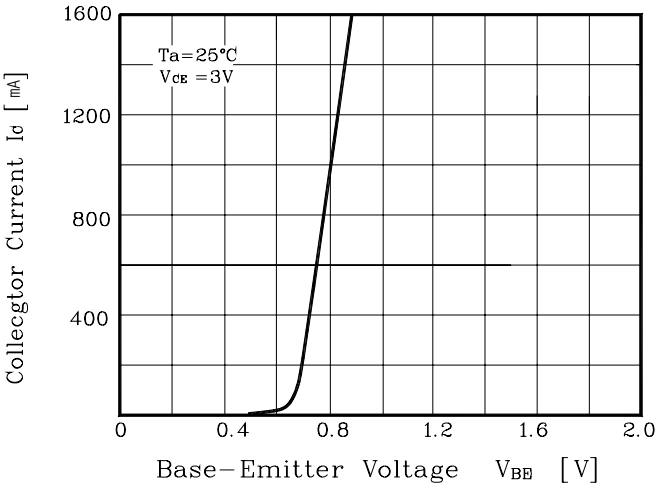


Fig. 3 I_C - V_{CE}

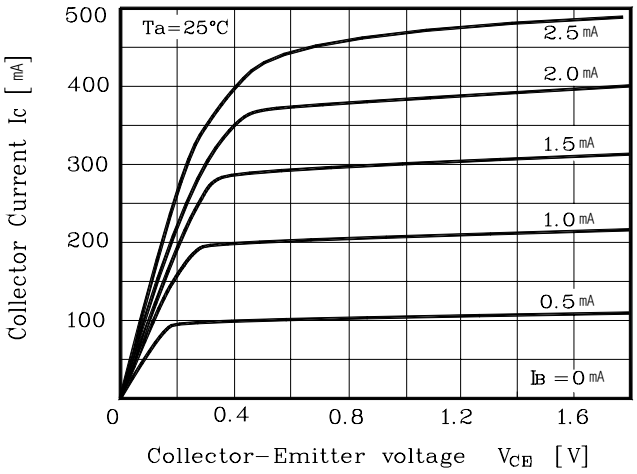
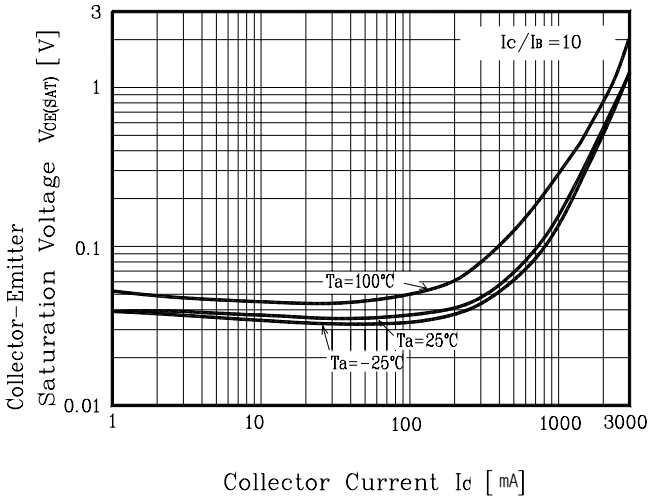


Fig. 4 $V_{CE(sat)}$ - I_C



Electrical Characteristic Curves

[TR2]

Fig. 1 hFE - I_C

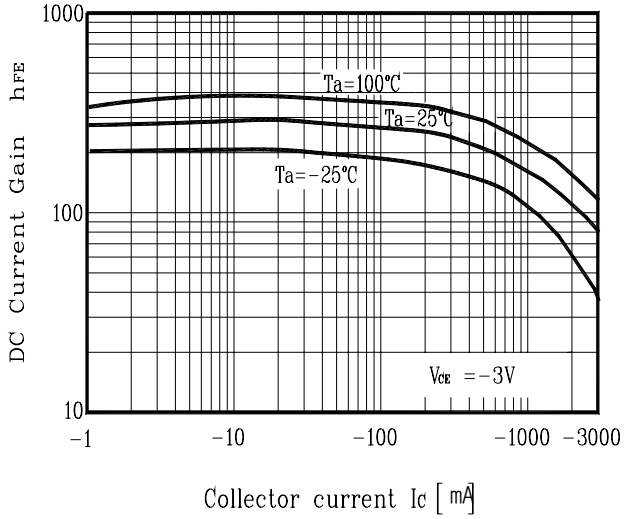


Fig. 2 I_C - V_{BE}

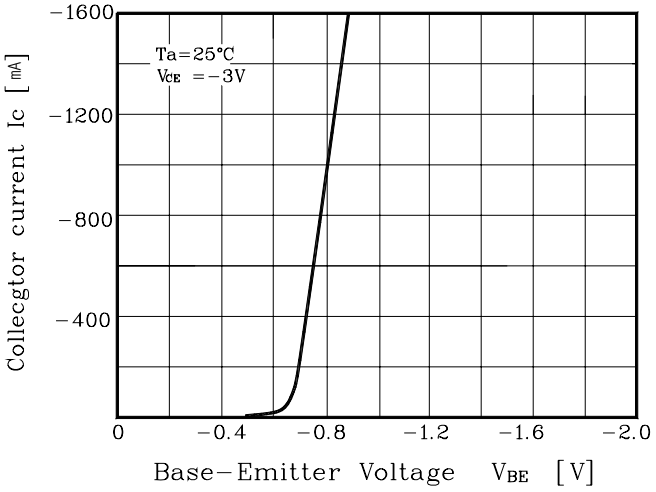


Fig. 3I_C - V_{CE}

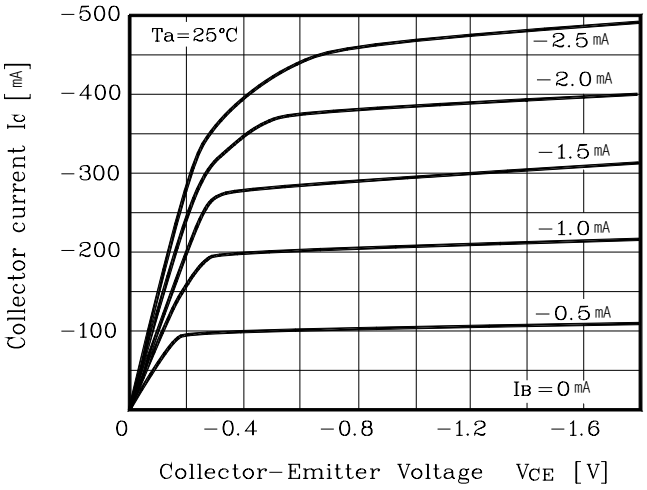
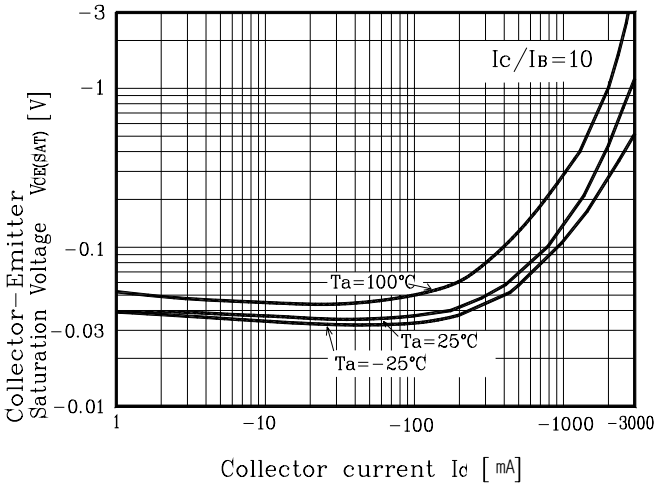
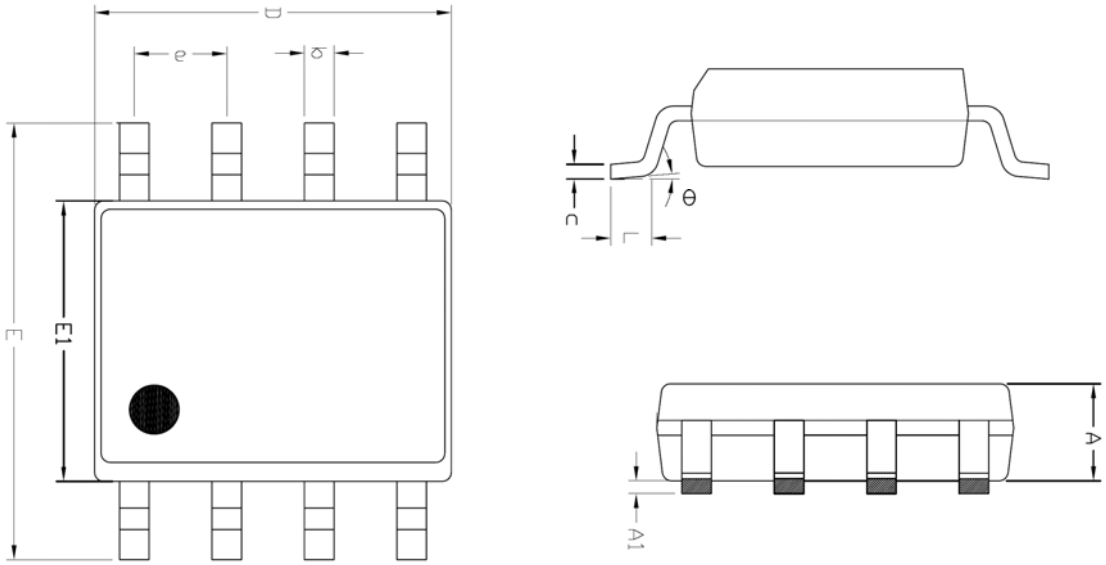


Fig. 4 $V_{CE(sat)}$ - I_C

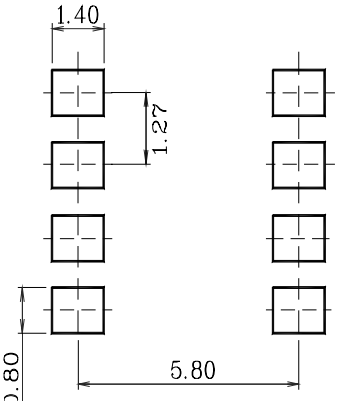


Outline Dimension



SYMBOL	MILLIMETER(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.245	—	1.445	
A1	0.125	0.175	0.275	
b	0.320	0.420	0.520	
c	0.170	0.220	0.270	
D	4.802	4.902	5.002	
E	5.870	6.020	6.170	
E1	3.761	3.861	3.961	
e	1.270 BSC			
L	0.462	0.562	0.662	
θ	0 °	—	8 °	

※Recommend PCB solder land [Unit: mm]



The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.