

## Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

# Dual PNP Small Signal Transistors

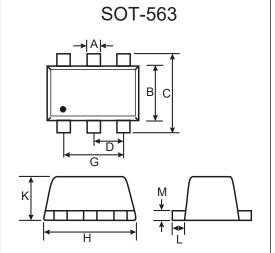
# Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-600	mA
Power Dissipation	PD	150	mW

#### Thermal characteristics

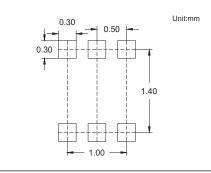
Parameter	Symbol	Rating	Unit
Operating Junction Temperature Range	T <sub>OPR</sub>	-55~+150	°C
Storage Temperature Range	T <sub>STR</sub>	-55~+150	٥C
Thermal Resistance from Junction to Ambient	Rth <sub>(j-a)</sub>	833	°C/W

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

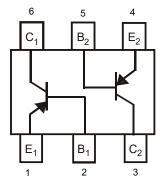


DIMENSIONS					
DIM	INCHES		M	М	NOTE
Divi	MIN	MAX	MIN	MAX	NOTE
Α	0.006	0.011	0.15	0.30	
В	0.043	0.051	1.10	1.30	
С	0.059	0.067	1.50	1.70	
D	0.020		0.50		TYP.
G	0.035	0.043	0.90	1.10	
Н	0.059	0.067	1.50	1.70	
K	0.022	0.026	0.55	0.65	
L	0.004	0.011	0.10	0.30	
М	0.004	0.007	0.10	0.18	

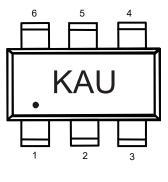
#### Suggested Solder Pad Layout



#### **Internal Structure**



**Device Marking** 





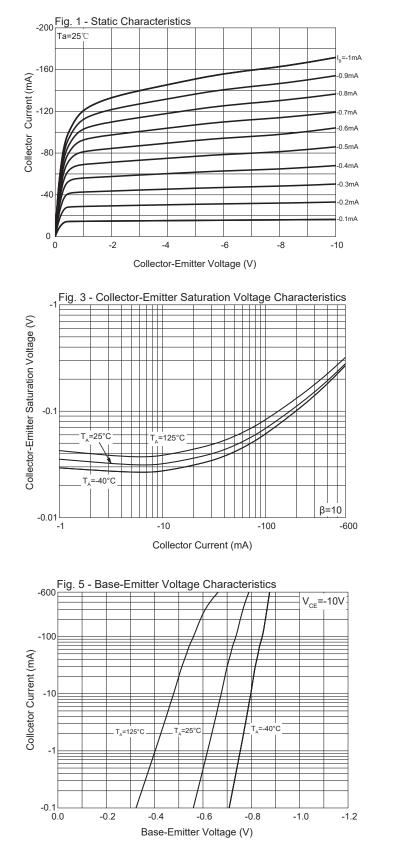
## Electrical Characteristics @ 25°C Unless Otherwise Specified

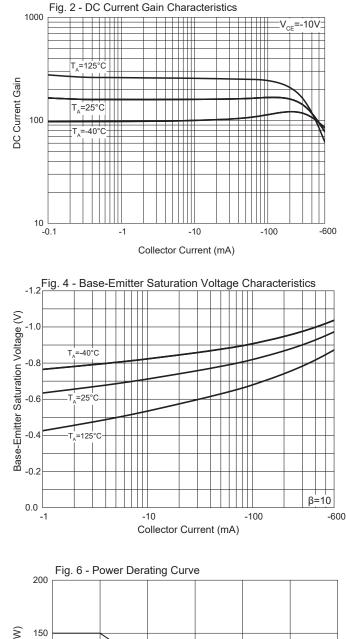
Parameter	Symbol	Min	Тур	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-60			V	I <sub>C</sub> =-10μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	-60			V	I <sub>C</sub> =-10mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-5			V	I <sub>E</sub> =-10μΑ, I <sub>C</sub> =0
Collector-Base Cutoff Current	I <sub>CBO</sub>			-10	nA	V <sub>CB</sub> =-50V, I <sub>E</sub> =0
Collecto Cutoff Current	I <sub>CEX</sub>			-50	nA	V <sub>CE</sub> =-30V, V <sub>BE</sub> =-0.5V
Emitter-Base Cutoff Current	I <sub>EBO</sub>			-10	nA	$V_{EB}$ =-5V, I <sub>C</sub> =0
DC Current Gain <sup>(Note2)</sup>	h <sub>FE(1)</sub>	75				V <sub>CE</sub> =-10V, I <sub>C</sub> =-0.1mA
	h <sub>FE(2)</sub>	100				V <sub>CE</sub> =-10V, I <sub>C</sub> =-1mA
	h <sub>FE(3)</sub>	100				V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA
	h <sub>FE(4)</sub>	100		300		V <sub>CE</sub> =-10V, I <sub>C</sub> =-150mA
	h <sub>FE(5)</sub>	50				V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA
Collector-Emitter Saturation Voltage	V			-0.4	V	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA
	V <sub>CE(sat)</sub>			-1.6	V	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>			-1.3	V	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA
				-2.6	V	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA
Transition Frequency	f <sub>T</sub>	200			MHz	V <sub>CE</sub> =-20V, I <sub>C</sub> =-50mA, f=100MHz
Output Capacitance	C <sub>ob</sub>			8	pF	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz

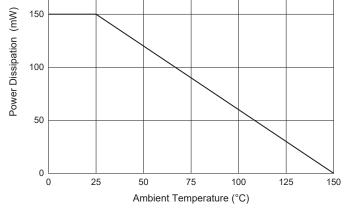
Note: 2.Pulse Width ≤ 300µs, Duty Cycle≤2.0%



## **Curve Characteristics**









# **Ordering Information**

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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