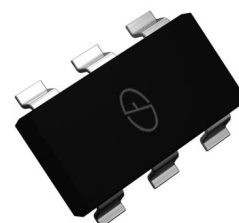


Dual-NPN+NPN Type Bipolar Transistors

Features

- Low Profile Package
- Ideal for Automated Placement
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS Compliant

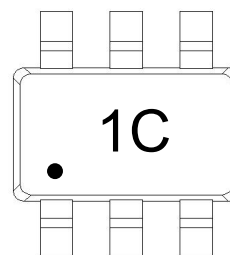


Marking: .1C

SOT-363

Applications

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance



Mechanical Data

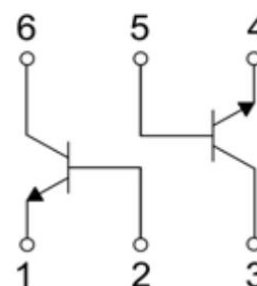
- Package: SOT-363
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

Pin definition



2.5: Base
1.4: Emitter
3.6: Collector

Equivalent circuit



Maximum Ratings & Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

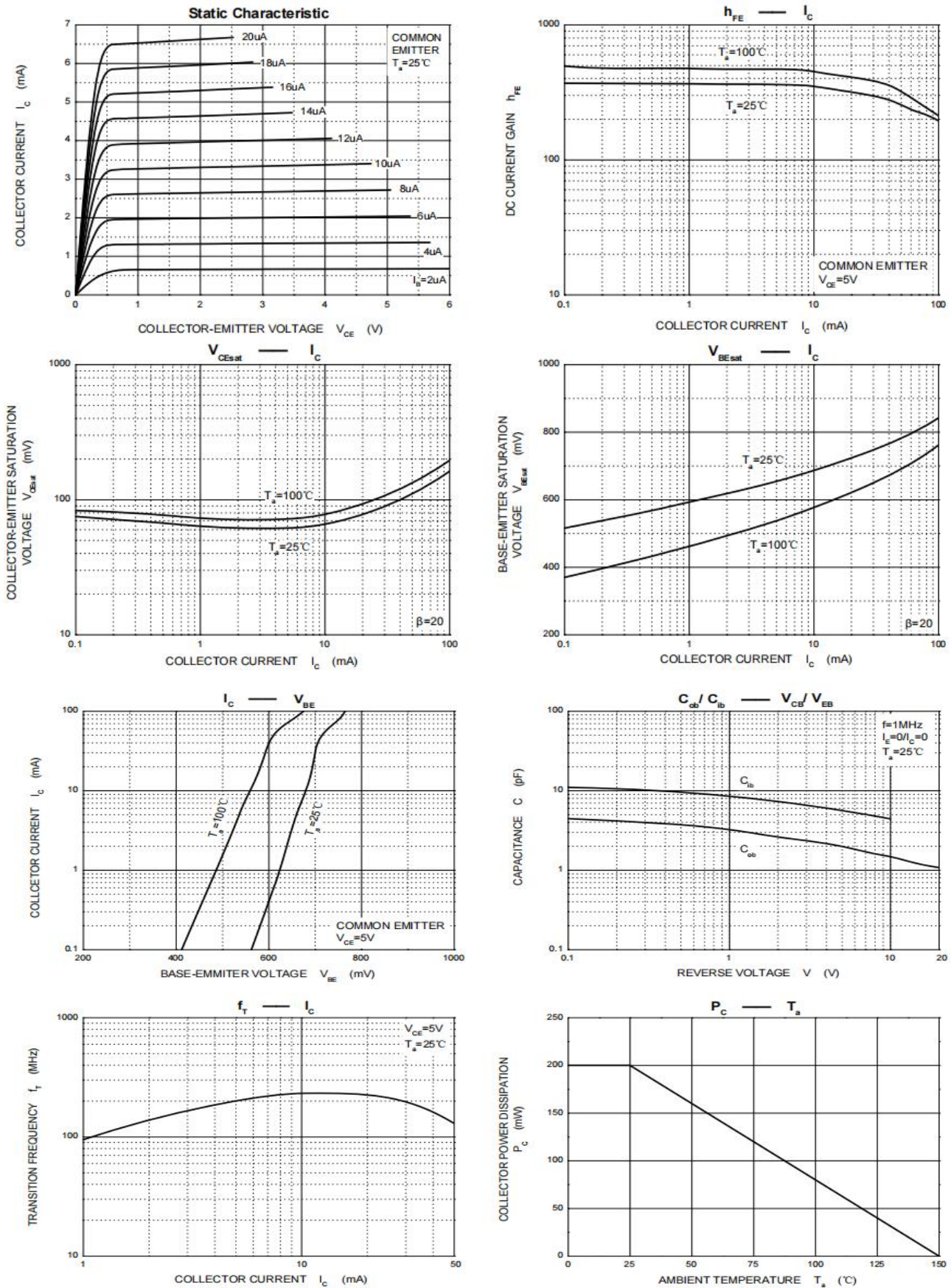
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current Continuous	I_C	100	mA
Collector Power Dissipation	P_D	200	mW
Thermal Resistance. Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Operating Junction temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical Specifications($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Limit			Unit
			Min	Typ	Max	
Collector-BaseBreakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	50			V
Collector-EmitterBreakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	45			V
Emitter-BaseBreakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$			15	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			15	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	110		630	
Collector-EmitterSaturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 0.5\text{mA}$			0.25	V
		$I_C = 100\text{mA}, I_B = 5\text{mA}$			0.65	V
Base-EmitterSaturation Voltage	$V_{BE(sat)}$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	0.58		0.70	V
		$V_{CE} = 5\text{V}, I_C = 10\text{mA}$			0.72	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 20\text{mA}$ $f = 100\text{MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1.0\text{MHz}$		2		pF

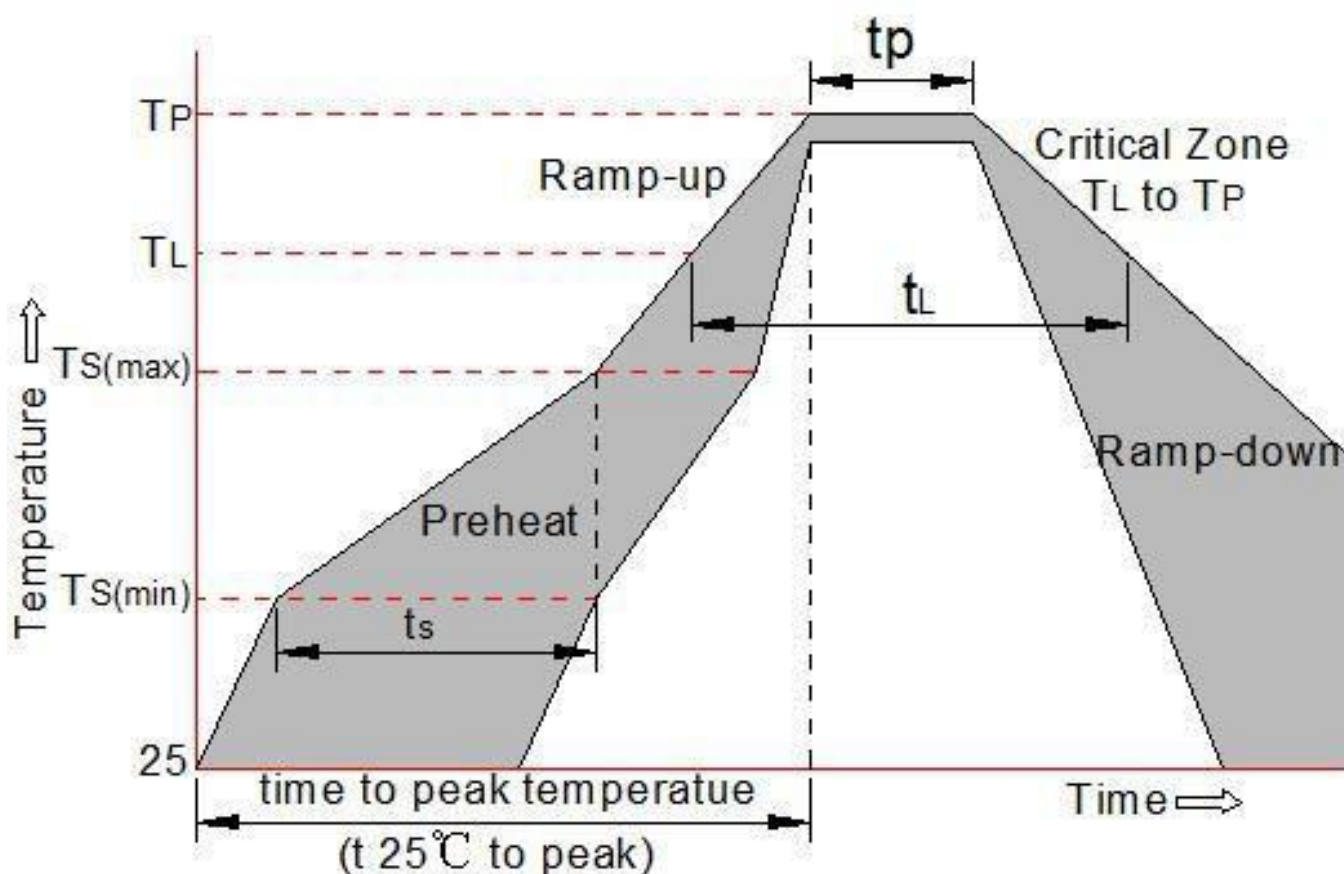
Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)



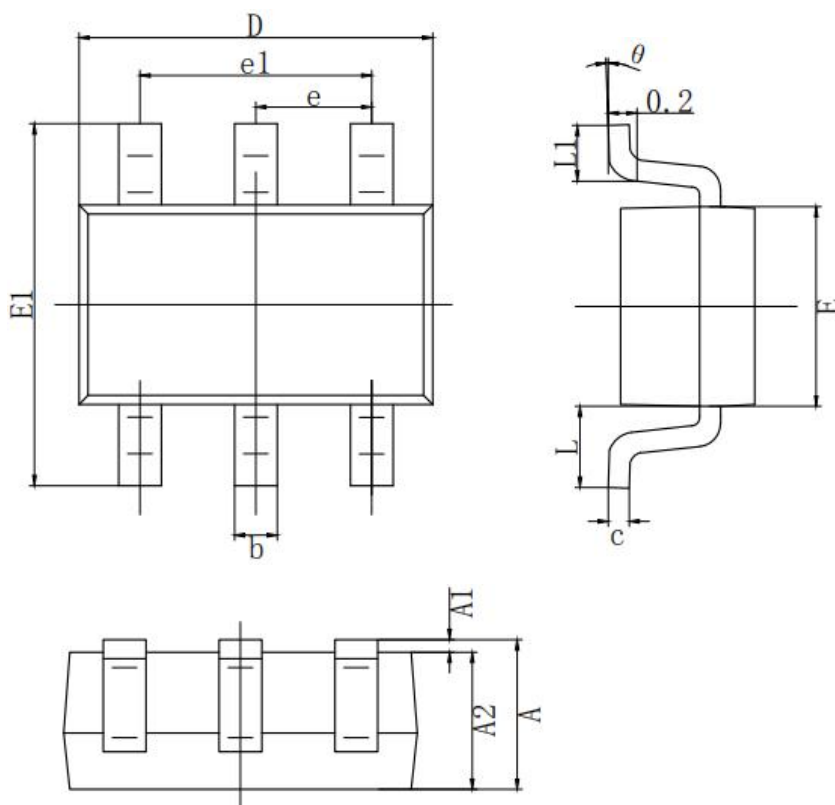
Soldering Parameters

Reflow Condition		Pb -Free assembly (see as bellow)
Pre Heat	-Temperature Min (T _{s(min)})	+150 °C
	-Temperature Max(T _{s(max)})	+200 °C
	-Time (Min to Max) (ts)	60 -180 secs.
Average ramp up rate (Liquid us Temp (T _L) to peak)		3 °C /sec. Max
T _{s(max)} - T _L - Ramp -up Rate		3 °C /sec. Max
Reflow	-Temperature(T _L) (Liquid us)	+217 °C
	-Temperature(t _L)	60 -150 secs.
Peak Temp (T _p)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t _p)		30 secs. Max
Ramp -down Rate		6 °C /sec. Max
Time 25 °C to Peak Temp (T _P)		8 min. Max
Do not exceed		+260 °C



Package Outline Dimensions

millimeters



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

Revision History

Document Version	Date of release	Description of changes
Rev.A	2017.06.13	First issue

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