

### (NPN+PNP)

## Silicon NPN Epitaxial Planer Transistor(Tr1)

## Silicon PNP Epitaxial Planer Transistor(Tr2)

MARKING: 5C

● Tr1(NPN)

**MAXIMUM RATINGS**

Parameter	Symbol	Ratings	Unit
Collector-Emitter Voltage	$V_{CEO}$	50	V
Collector-Base Voltage	$V_{CBO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector current-continuoun	$I_C$	150	mAdc

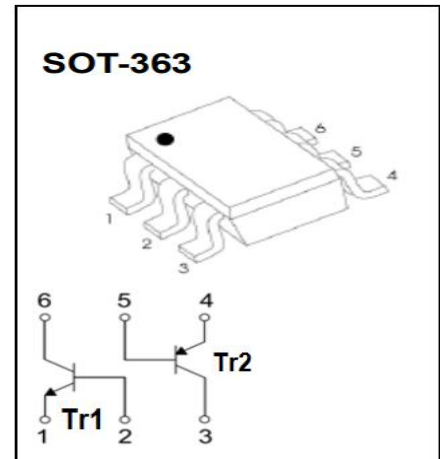
● Tr2(PNP)

**MAXIMUM RATINGS**

Parameter	Symbol	Ratings	Unit
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Collector-Base Voltage	$V_{CBO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Collector current-continuoun	$I_C$	-150	mAdc

**THERMAL CHARATEERISTICS**

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A=25^\circ\text{C}$	$P_D$	380	mW
Thermal Resistance, Junction to Ambient	$R_{JA}$	328	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$



● Tr1

**ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (IC=1mA)	V(BR)CEO	50	-	-	V
Emitter-Base Breakdown Voltage (IE=50 A)	V(BR)EBO	6	-	-	V
Collector-Base Breakdown Voltage (IC=50 A)	V(BR)CBO	60	-	-	V
Collector Cutoff Current (VCB=60V)	ICBO	-	-	0.1	uA
EMITTER CUTOFF CURRENT VEB=7V	IEBO	-	-	0.1	uA

**ON CHARACTERISTICS**

DC Current Gain (IC=1mA, VCE=6.0V)	Hfe	120	-	560	
Collector-Emitter Saturation Voltage (IC=50mA, IB=5mA)	VCE(SAT)	-	-	0.4	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product (VCE = 12.0V; IE = -2.0 mA, f=100MHZ)	Ft	-	180	-	MHz
Output Capacitance(VCE=12V, f=1.0MHz)	Cobo	-	2	3.5	Pf

● Tr2

**ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (IC=-1mA)	V(BR)CEO	-50	-	-	V
Emitter-Base Breakdown Voltage (IE=-50 A)	V(BR)EBO	-6	-	-	V
Collector-Base Breakdown Voltage (IC=-50 A)	V(BR)CBO	-60	-	-	V
Collector Cutoff Current (VCB=-60V)	ICBO	-	-	-0.1	uA
Emitter Cutoff Current (VBE=-6V)	IEBO	-	-	-0.1	uA

**ON CHARACTERISTICS**

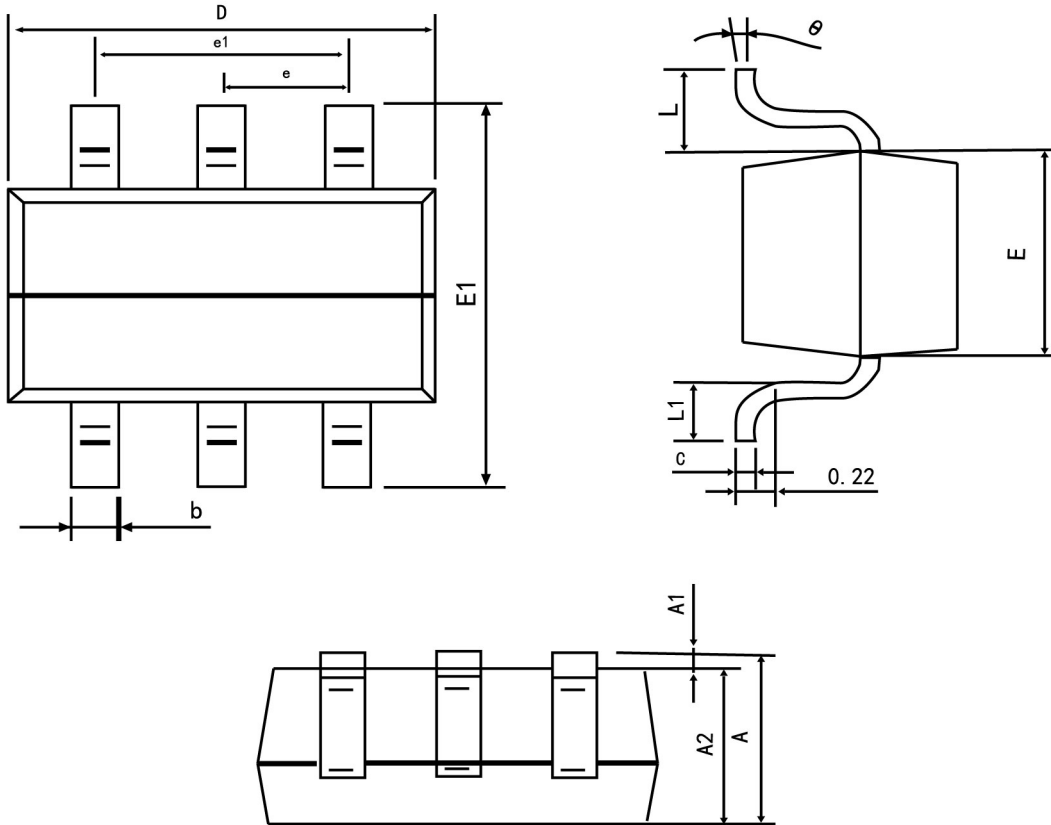
DC Current Gain (IC=-1mA, VCE=-6.0V)	Hfe	120	-	560	
Collector-Emitter Saturation Voltage (IC=-50mA, IB=-5mA)	VCE(SAT)	-	-	-0.5	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product (VCE = -12.0V; IE = 2.0 mA, f=300MHZ)	Ft	-	140	-	MHz
Output Capacitance(VCB=-12V, f=1.0MHz)	Cobo	-	4	5	Pf



## SOT-363-Package Outline Dimensions



Symbol	Dimension in Millimeters	
	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°