

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV

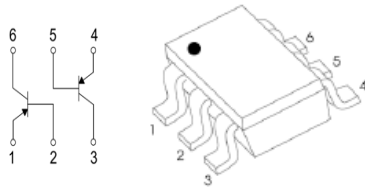


GDT



PLED

Product data sheet


**SOT-363**

## BC857S

DUAL TRANSISTOR (PNP+PNP)  
 Isolated Transistor and Diode

### FEATURES

- Two transistors in one package
- Reduces number of components and board space
- No mutual interference between the transistors

**MARKING: 3F**

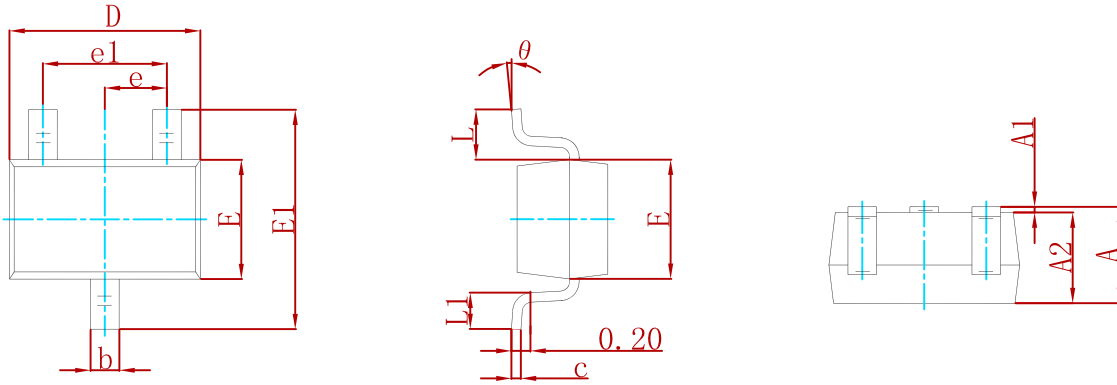
**MAXIMUM RATINGS**( $T_a=25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector- Base Voltage	-50	V
$V_{CEO}$	Collector-Emitter Voltage	-45	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-0.2	A
$P_C$	Collector Power Dissipation	0.3	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	417	$^\circ\text{C}/\text{W}$
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**( $T_a=25^\circ\text{C}$  unless otherwise specified)

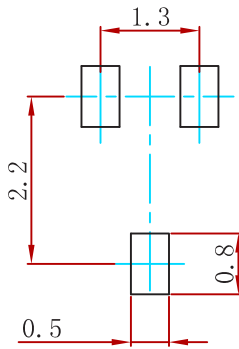
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-30\text{V}, I_E=0$			-15	nA
DC current gain	$h_{FE}$	$V_{CE}=-5\text{V}, I_C=-2\text{mA}$	125		630	
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=-10\text{mA}, I_B=-0.5\text{mA}$			-0.3	V
	$V_{CE(sat)(2)}$	$I_C=-100\text{mA}, I_B=-5\text{mA}$			-0.65	V
Base-emitter voltage	$V_{BE(1)}$	$V_{CE}=-5\text{V}, I_C=-2\text{mA}$	-0.6		-0.75	V
	$V_{BE(2)}$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$			-0.82	V
Transition frequency	$f_T$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$		3.5		pF
Noise figure	NF	$V_{CE}=-5\text{V}, I_C=-0.2\text{mA},$ $f=1\text{kHz}, R_s=2\text{k}\Omega, BW=200\text{Hz}$		2.5		dB

**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

**Suggested Pad Layout**



Note:  
 1. Controlling dimension: in millimeters.  
 2. General tolerance: ±0.05mm.  
 3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
BC857S	SOT-323	3000

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