

## SOT-353 Plastic-Encapsulate Transistors

### UML6N Isolated Transistor and Diode

#### FEATURES

2SC5585 and RB521S-30 chips in a package

#### APPLICATIONS

DC / DC converter

Motor driver

#### FEATURES

1) Tr : Low VCE(sat)

Di : Low VF

2) Small package

#### STRUCTURE

Silicon epitaxial planar transistor

Schottky barrier diode

Marking: L6

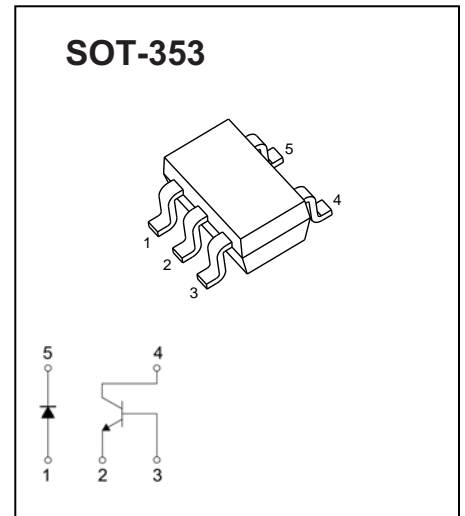
#### Absolute maximum ratings (Ta=25°C)

##### DI

Parameter	Symbol	Limits	Unit
DC reverse voltage	$V_R$	30	V
Mean rectifying current	$I_o$	200	mA
Peak forward surge current	$I_{FSM}$	1	A
Operating Junction Temperature Range	$T_j$	-40~+125	°C
Storage temperature Range	$T_{stg}$	-55~+150	°C

##### TR

Symbol	Parameter	Limits	Unit
$V_{CBO}$	Collector-Base Voltage	15	V
$V_{CEO}$	Collector-Emitter Voltage	12	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	500	mA
$P_C$	Collector Dissipation	150	mW
$T_J, T_{STG}$	Operation Junction and Storage Temperature Range	-55~+150	°C



**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

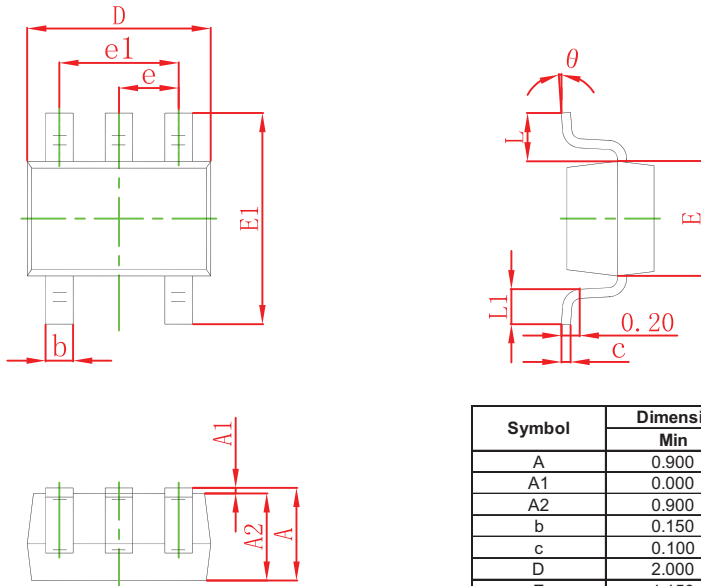
DI

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	$V_F$			0.5	V	$I_F=200\text{mA}$
Reverse current	$I_R$			30	$\mu\text{A}$	$V_R=10\text{V}$

TR

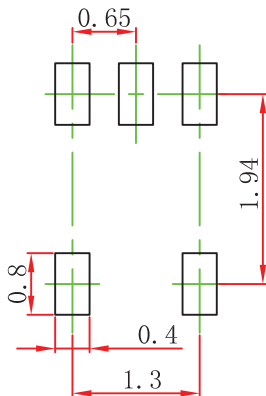
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	15			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=15\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=2\text{V}, I_C=10\text{mA}$	270		680	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=10\text{mA}$			0.25	V
Transition frequency	$f_T$	$V_{CE}=2\text{V}, I_E=-10\text{mA}, f=100\text{MHz}$		320		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0\text{mA}, f=1\text{MHz}$		7.5		pF

## SOT-353 Package Outline Dimensions



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	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
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
theta	0°	8°	0°	8°

## SOT-353 Suggested Pad Layout



Note:

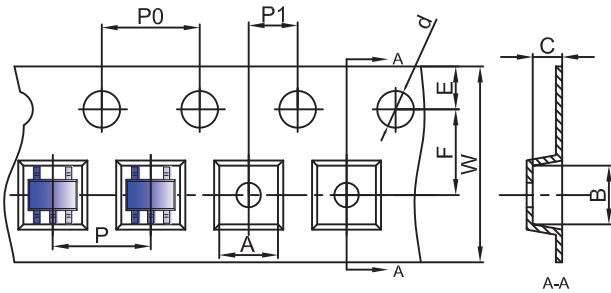
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

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# SOT-353 Tape and Reel

## SOT-353 Embossed Carrier Tape

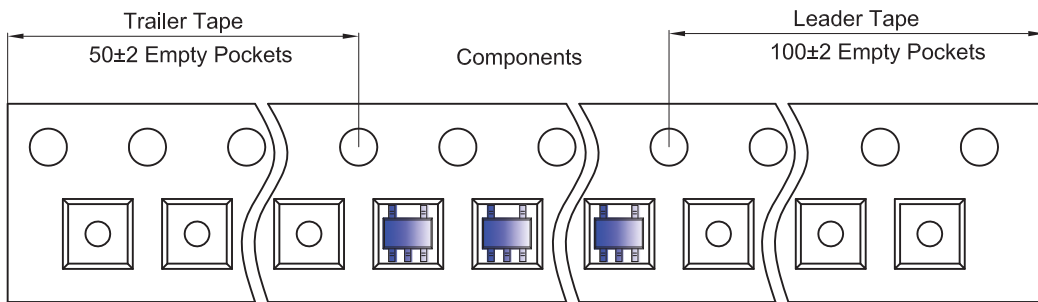


### Packaging Description:

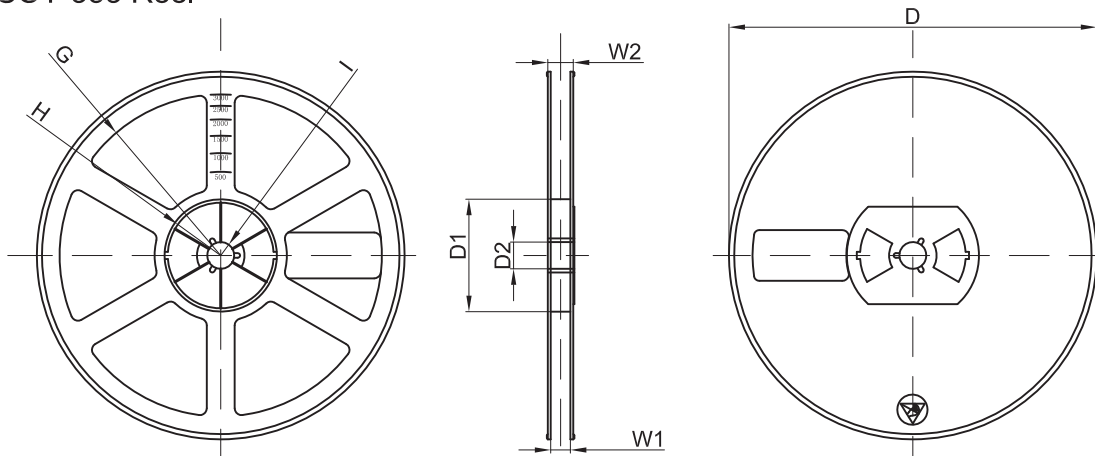
SOT-353 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-353	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-353 Tape Leader and Trailer



## SOT-353 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	