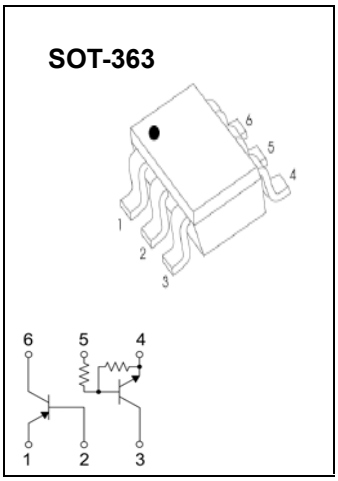
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

SOT-363 Plastic-Encapsulate Transistors

UMF21N DUAL DIGITAL TRANSISTOR (NPN+PNP)



DESCRIPTION
Silicon epitaxial planar transistor

FEATURES
- 2SA2018 and DTC114E are housed independently in a package.
- Power switching circuit in a single package.
- Mounting cost and area can be cut in half.

APPLICATION
- Power management circuit, mobile telephone quiver circuit
- For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM, Note book PC, etc.)

MARKING:F21

TR1 MAXIMUM RATINGS T_a=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
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	-0.5	A
P_C	Collector Dissipation	0.15	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

DTR2 Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10~40	V
Output current	I_O	50	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	150	mW
Operation Junction and Storage Temperature Range	T_J,Tstg	-55~+150	℃

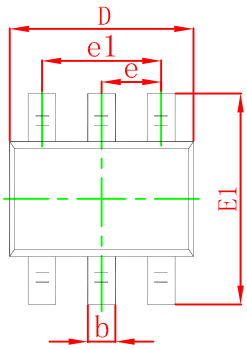
TR1 ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

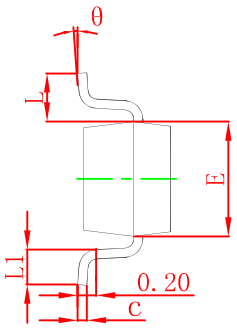
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-15			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-6			V
Collector cut-off current	I_{CBO}	V_{CB}= -15 V, I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=- 6V, I_C=0			-0.1	μA
DC current gain	h_{FE}	V_{CE}=-2V, I_C=-10mA	270		680	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-200mA,I_B=-10mA			-0.25	V
Transition frequency	f_T	V_{CE}=-2V,I_C=-10mA, f=100MHz		260		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz		6.5		pF

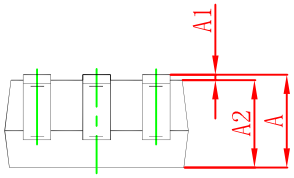
DTR2 Electrical Characteristics (Ta=25 ℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	0.5			V	V_{CC}=5V ,I_O=100μA
	$V_{I(on)}$			3		V_O=0.3V ,I_O=10 mA
Output voltage	$V_{O(on)}$			0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.88	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	30				V_O=5V ,I_O=5mA
Input resistance	R_1	7	10	13	KΩ	
Resistance ratio	R_2/R_1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	V_{CE}=10V ,I_E=-5mA,f=100MHz

SOT-363 Package Outline Dimensions

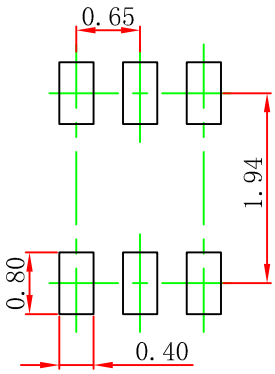






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 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
θ	0°	8°	0°	8°

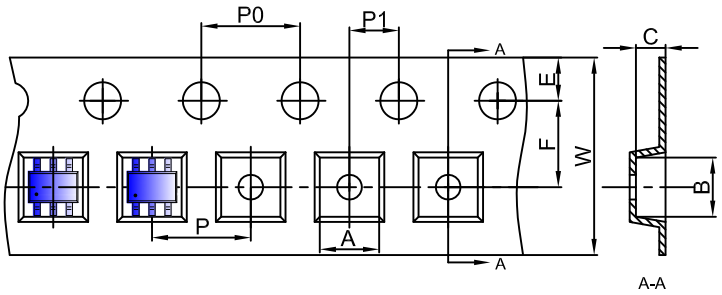
SOT-363 Suggested Pad Layout



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

SOT-363 Tape and Reel

SOT-363 Embossed Carrier Tape

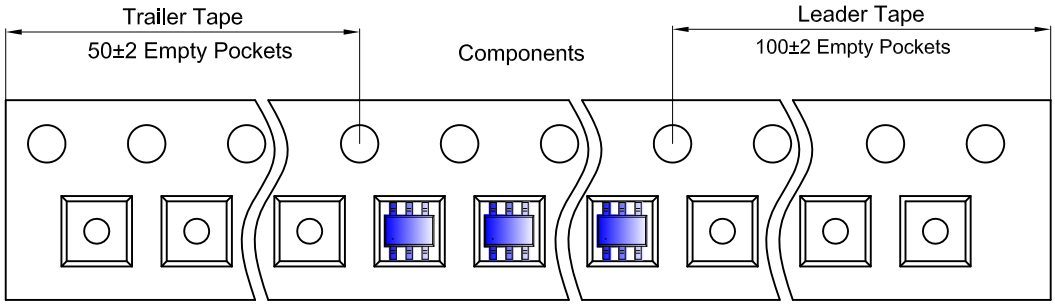


Packaging Description:

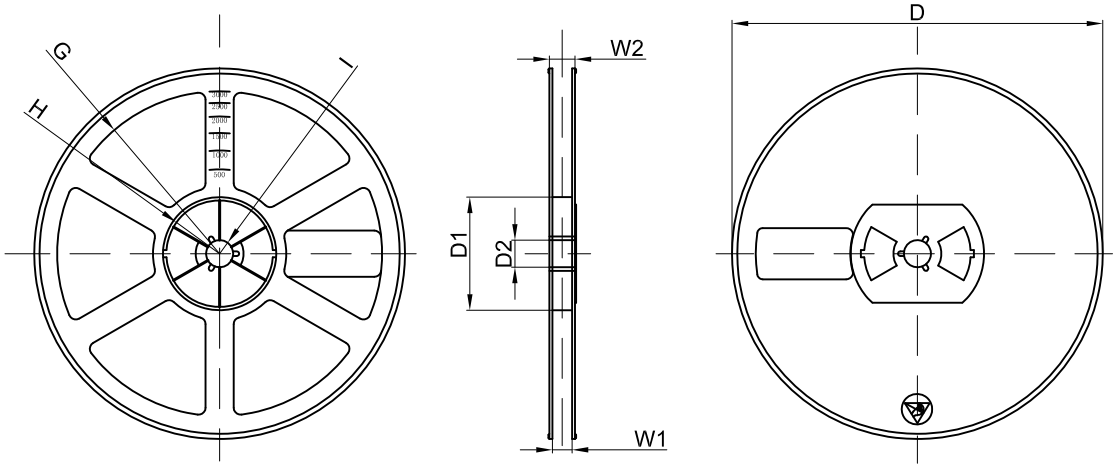
SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer



SOT-363 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	