



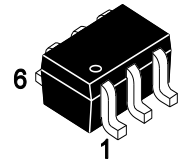
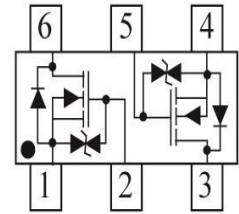
BSS139KDW

200 mAmps, 50 Volts N-Channel

1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements;
- Low threshold voltage (VGS(th): 0.5V...1.5V) makes it ideal for low voltage applications.

Marking : J2



SOT-363

MAXIMUM RATINGS(Ta = 25o C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	50	Vdc
Gate-to-Source Voltage – Continuous	VGS	±20	Vdc
Drain Current			mAdc
– Continuous TA = 25°C	ID	200	
– Pulsed (tp ≤ 10µs)	IDM	800	

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-4 Board (Note 1) @ TA = 25°C	PD	380	mW
Derate above 25°C		3.05	mW/°C
Thermal Resistance, Junction-to-Ambient(Note 1)	RθJA	328	°C/W
Junction and Storage temperature	TJ,Tstg	-55~+150	°C
Maximum Lead Temperature for Solde Purposes, for 10 seconds	TL	260	°C

1. FR-4 = 1.0×0.75×0.062 in.



ELECTRICAL CHARACTERISTICS (Ta= 25 °C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 250 μ A _{dc})	VBRDSS	50	-	-	V _{dc}
Zero Gate Voltage Drain Current (VGS = 0, VDS = 25 V _{dc}) (VGS = 0, VDS = 50 V _{dc})	IDSS	- -	- -	0.1 0.5	μ A _{dc}
Gate–Body Leakage Current, Forward (VGS = 20 V _{dc})	IGSSF	-	-	10	μ A _{dc}
Gate–Body Leakage Current, Reverse (VGS = - 20 V _{dc})	IGSSR	-	-	-10	μ A _{dc}

ON CHARACTERISTICS (Note 2)

Gate Threshold Voltage (VDS = VGS, ID = 1.0mA _{dc})	VGS(th)	0.5	-	1.5	V _{dc}
Static Drain–Source On–State Resistance (VGS = 2.75 V _{dc} , ID < 200 mA _{dc} , TA = -40°C to +85°C) (VGS = 5.0 V _{dc} , ID = 200 mA _{dc})	RDS(on)	- -	5.6 -	10 3.5	Ohms
Forward Transconductance (VDS = 25 V _{dc} , ID = 200 mA _{dc} , f = 1.0 kHz)	gfs	100	-	-	mS

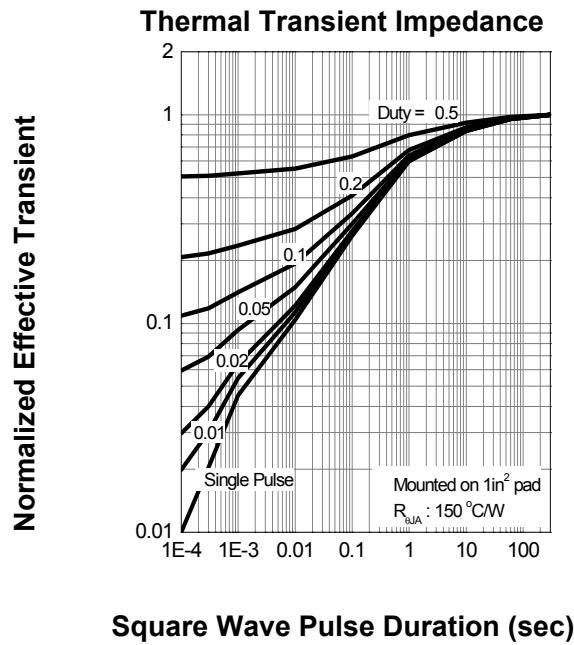
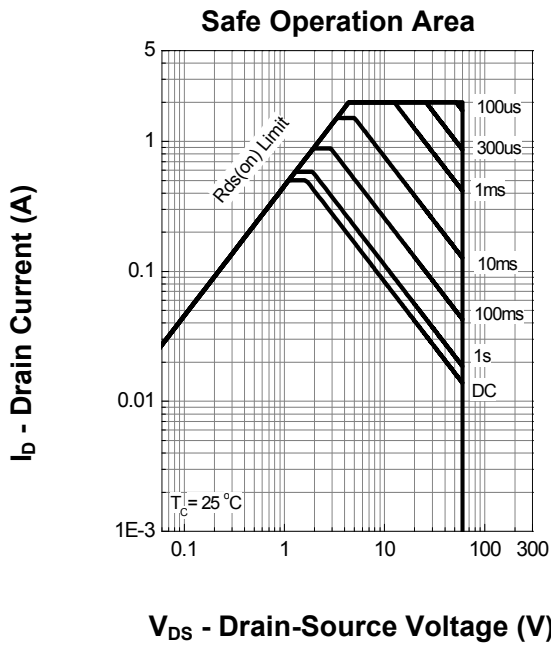
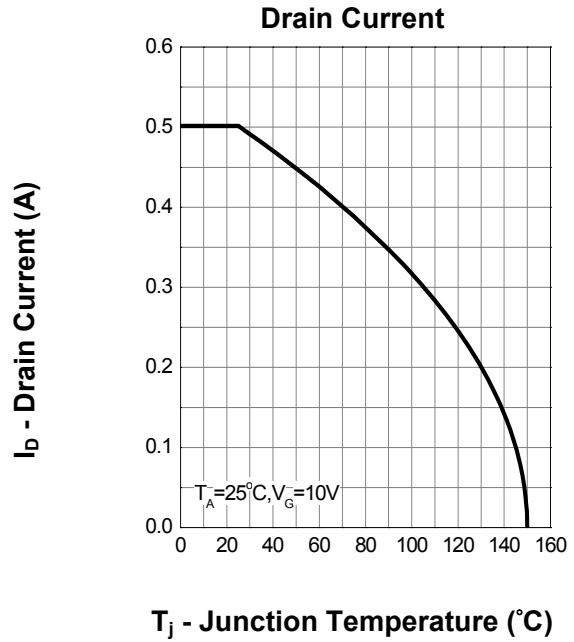
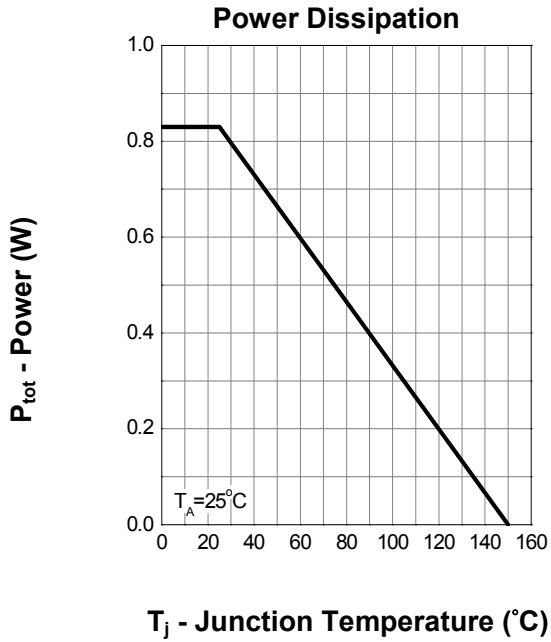
DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 V _{dc} , VGS = 0, f = 1.0 MHz)	Ciss	-	22.8	-	pF
Output Capacitance (VDS = 25 V _{dc} , VGS = 0, f = 1.0 MHz)	Coss	-	3.5	-	pF
Reverse Transfer Capacitance (VDS = 25 V _{dc} , VGS = 0, f = 1.0 MHz)	Crss	-	2.9	-	pF

SWITCHING CHARACTERISTICS

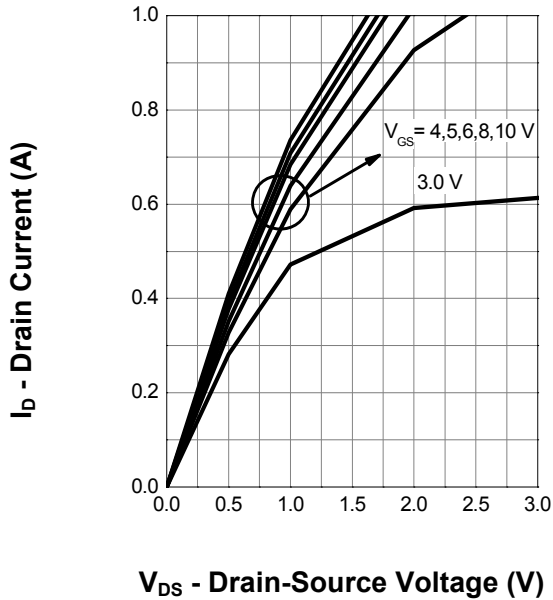
Turn-On Delay Time	(VDD = 30 V _{dc} , VGEN = 10 V, RG = 25 Ω , RL = 60 Ω , ID = 500 mA _{dc})	td(on)	-	3.8	-	ns
Turn-Off Delay Time		td(off)	-	19	-	

2.Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

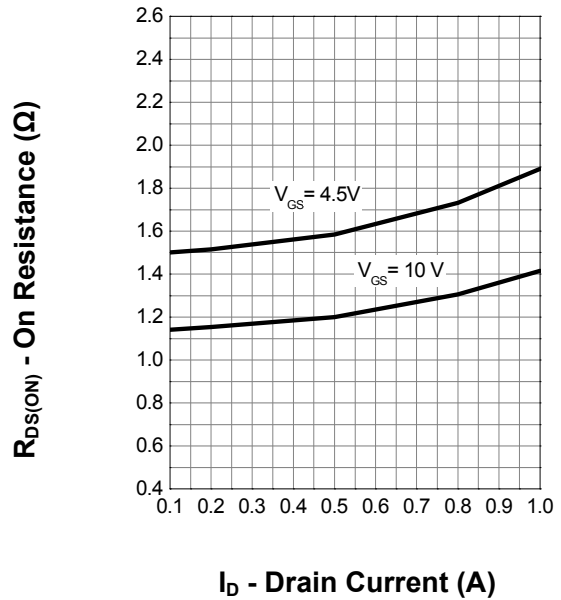




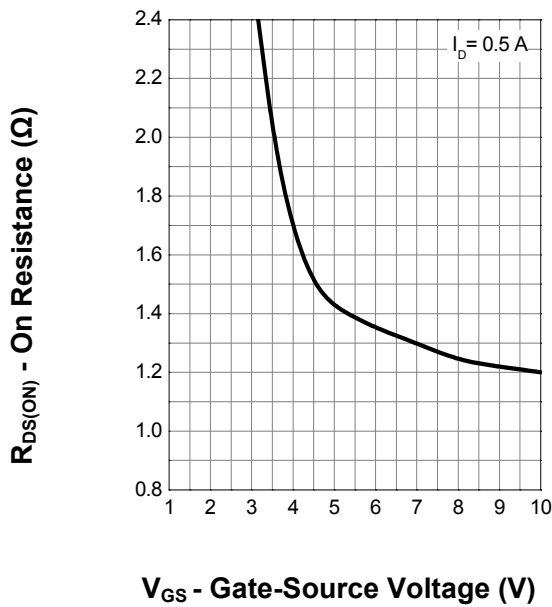
Output Characteristics



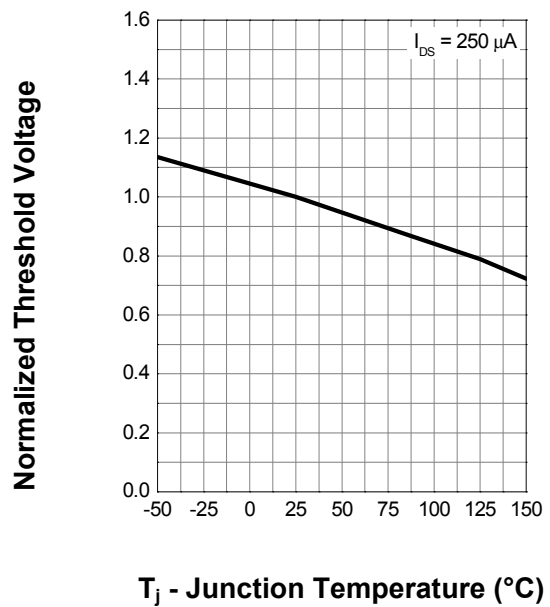
Drain-Source On Resistance

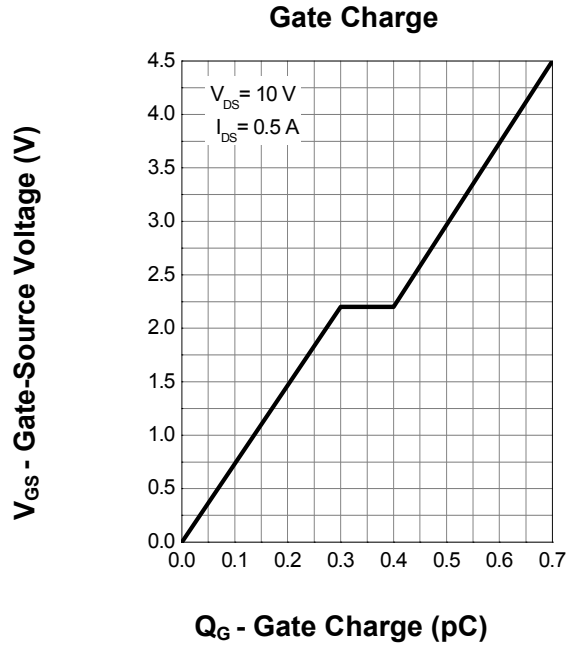
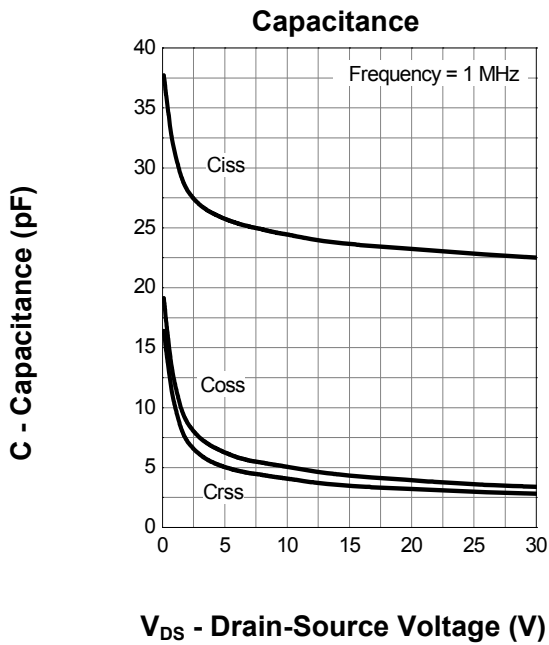
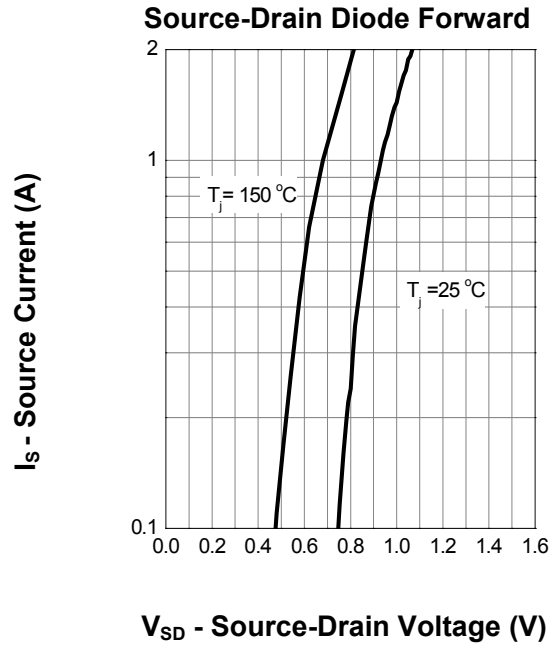
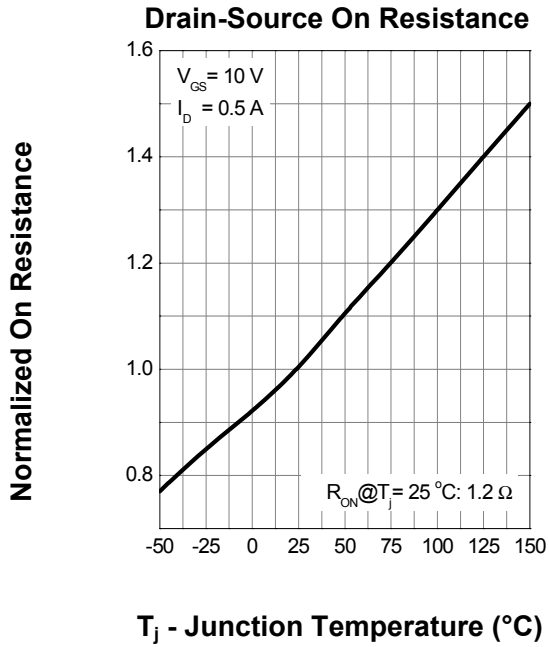


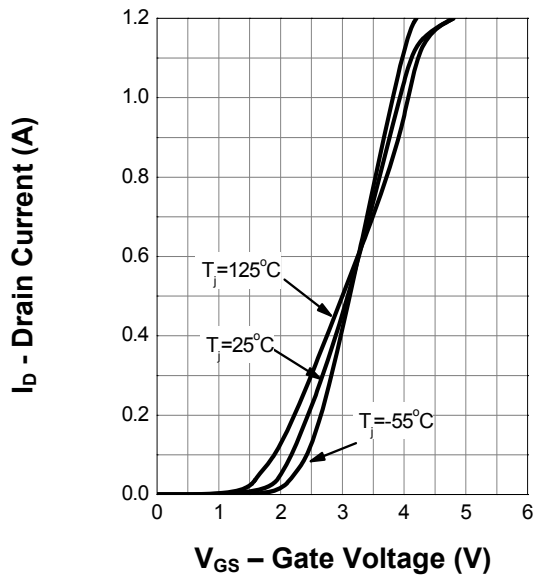
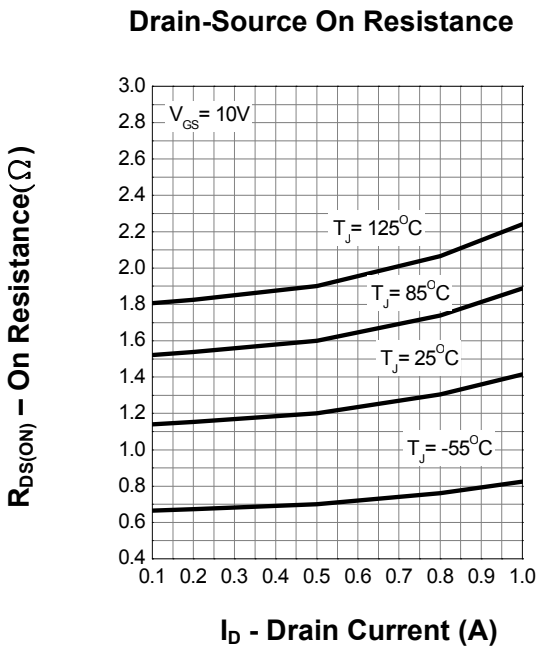
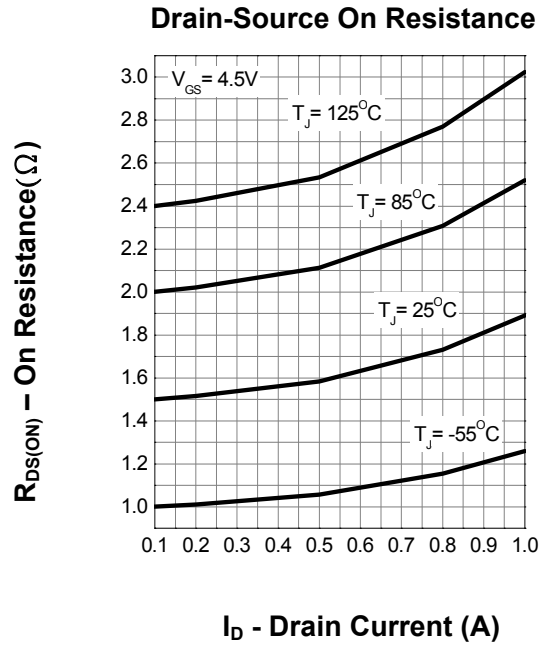
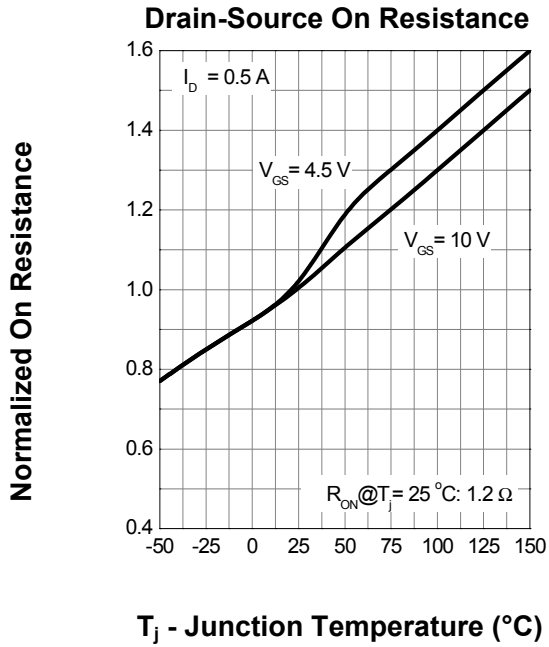
Transfer Characteristics



Gate Threshold Voltage

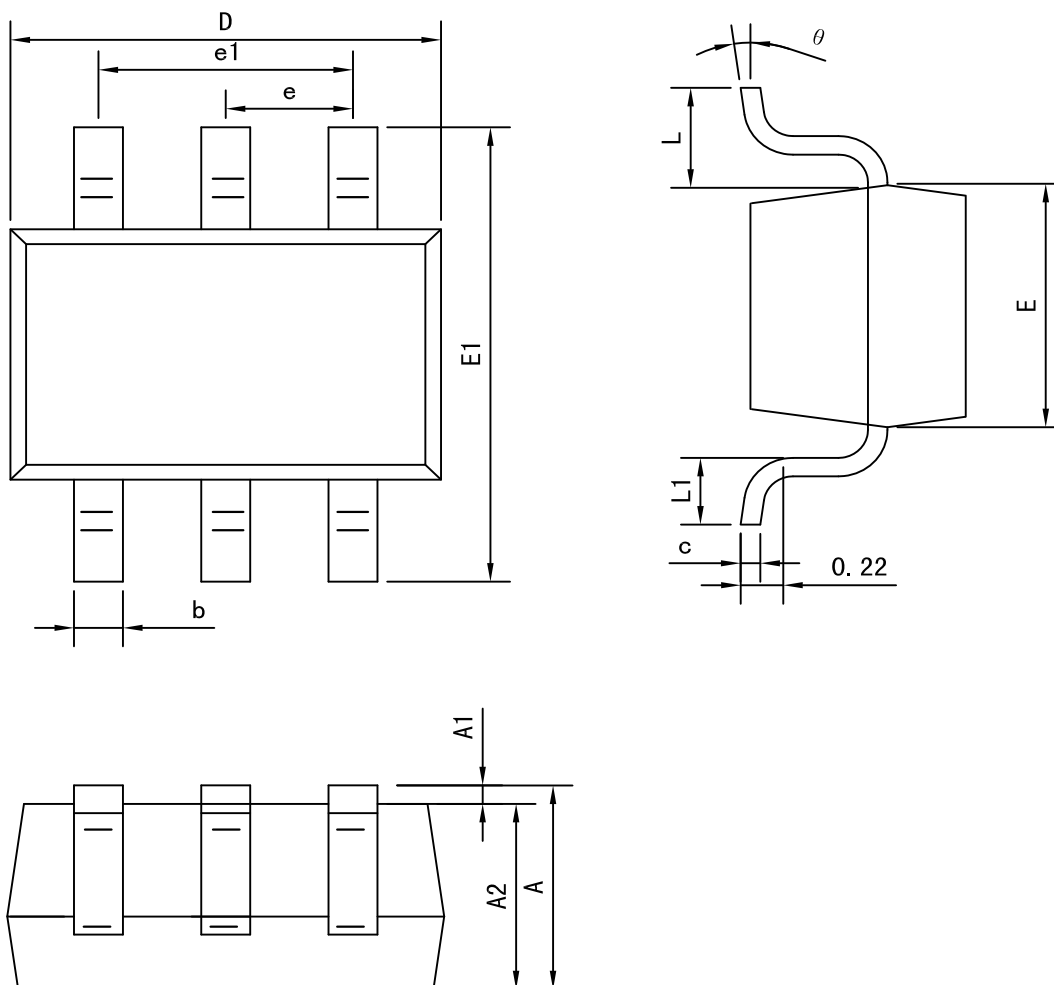








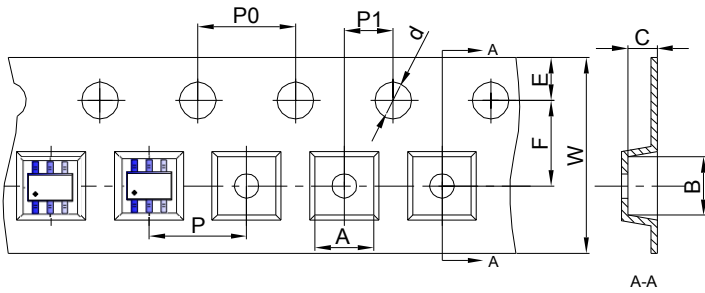
SOT-363 Package outline dimensions



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°



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

