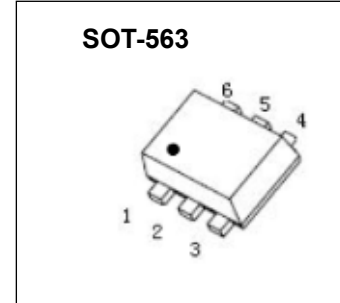




**SOT-563 Plastic-Encapsulate MOSFETS**

**2N7002V** MOSFET (N-Channel)

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
60V	5Ω@10V	115mA
	7Ω@5V	



**FEATURE**

- Dual N-channel MOSFET
- Low on-resistance
- Low gate threshold voltage
- Low input capacitance
- Fast switching speed
- Low input/output leakage

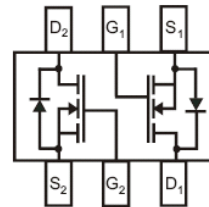
**APPLICATION**

- Load Switch for Portable Devices
- DC/DC Converter

**MARKING**



**Equivalent Circuit**



**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

Symbol	Parameter	Value	Unit
$V_{DS}$	Drain-Source voltage	60	V
$V_{GS}$	Gate-Source voltage	20	V
$I_D$	Drain Current	115	mA
$P_D$	Power Dissipation	150	mW
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55-150	°C

## MOSFET ELECTRICAL CHARACTERISTICS

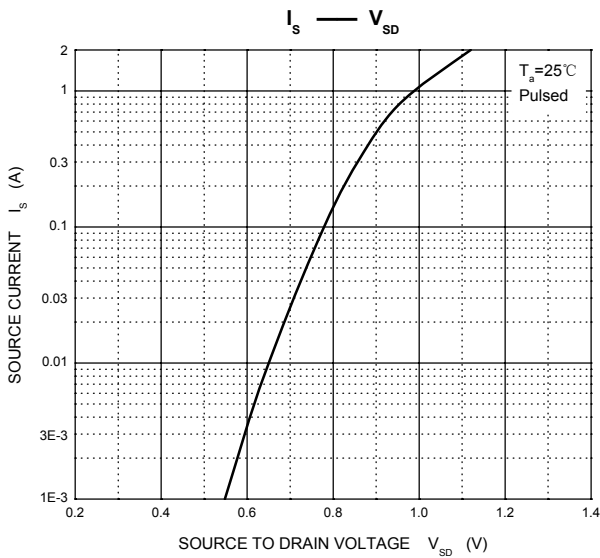
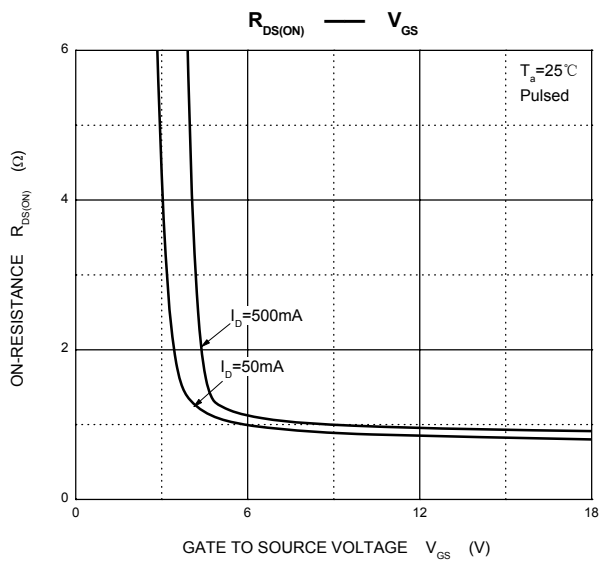
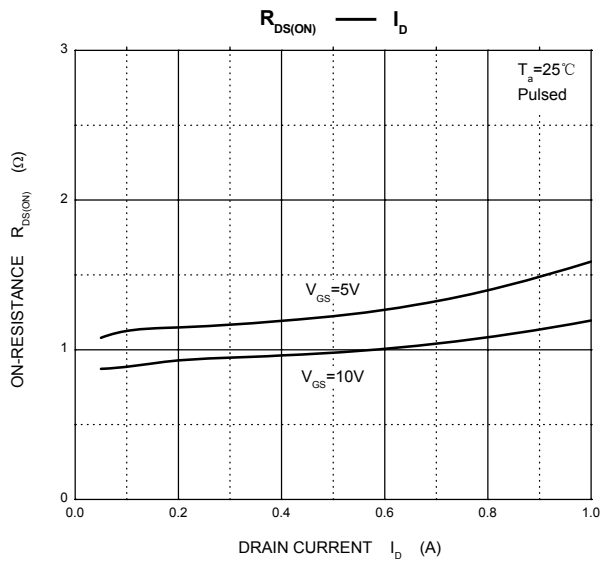
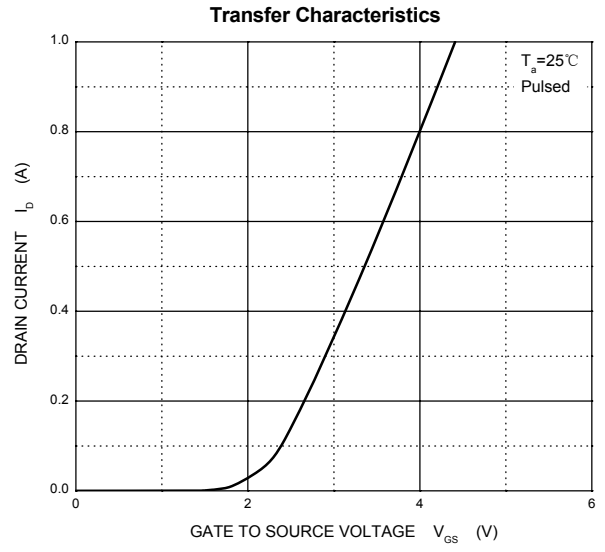
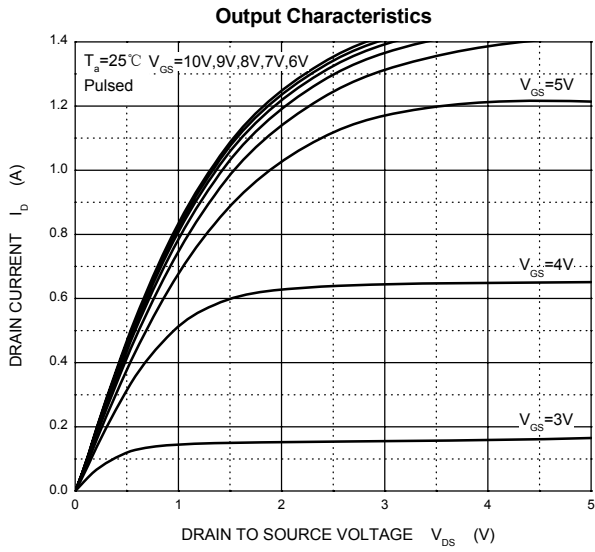
$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}, I_D=250\text{ }\mu\text{A}$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\text{ }\mu\text{A}$	1		2.5	
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0\text{ V}, V_{GS}=\pm 20\text{ V}$			$\pm 80$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60\text{ V}, V_{GS}=0\text{ V}$			80	nA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10\text{ V}, V_{DS}=7\text{ V}$	500			mA
Drain-Source On-Resistance	$r_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=500\text{ mA}$			5	$\Omega$
		$V_{GS}=5\text{ V}, I_D=50\text{ mA}$			7	
Forward Trans conductance	$g_{fs}$	$V_{DS}=10\text{ V}, I_D=200\text{ mA}$	80			mS
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=500\text{ mA}$			3.75	V
		$V_{GS}=5\text{ V}, I_D=50\text{ mA}$			0.375	V
Diode Forward Voltage	$V_{SD}$	$I_S=115\text{ mA}, V_{GS}=0\text{ V}$	0.55		1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25\text{ V}, V_{GS}=0\text{ V}, f=1\text{ MHz}$			50	pF
Output Capacitance	$C_{oss}$				25	
Reverse Transfer Capacitance	$C_{rSS}$				5	

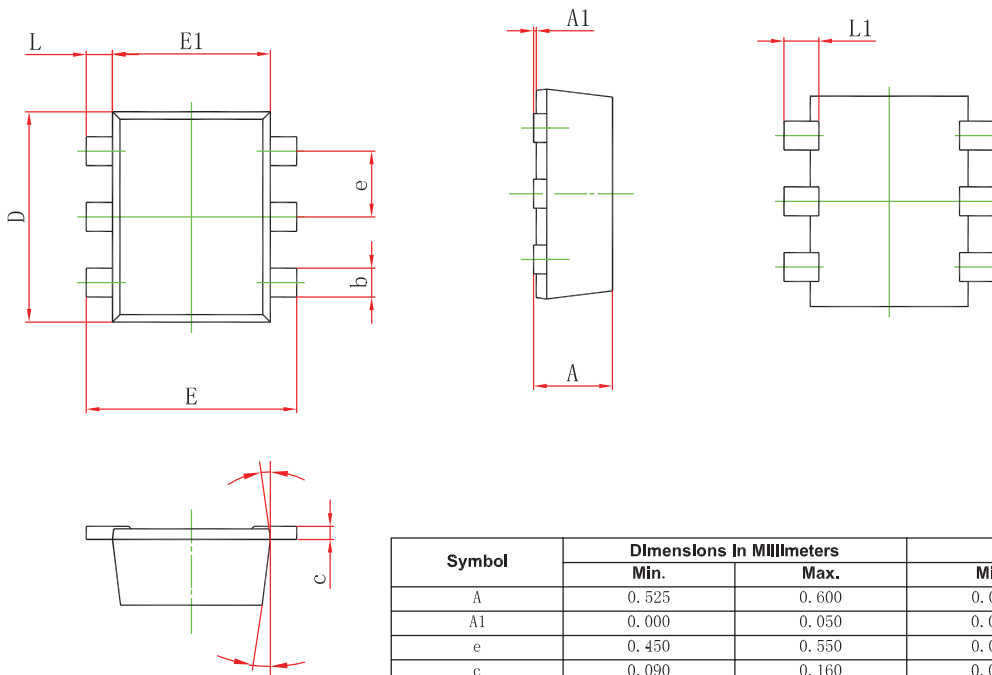
### SWITCHING TIME

Turn-on Time	$t_{d(on)}$	$V_{DD}=25\text{ V}, R_L=50\text{ }\Omega$			20	ns
Turn-off Time	$t_{d(off)}$	$I_D=500\text{ mA}, V_{GEN}=10\text{ V}$ $R_G=25\text{ }\Omega$			40	

# Typical Characteristics

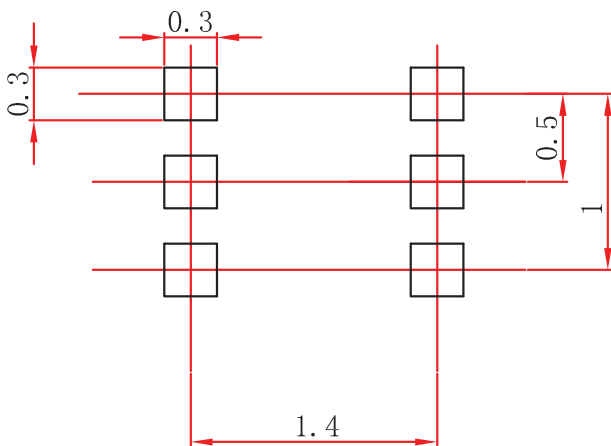


## SOT-563 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
$\theta$	7 °REF.		7 °REF.	

## SOT-563 Suggested Pad Layout



### Note:

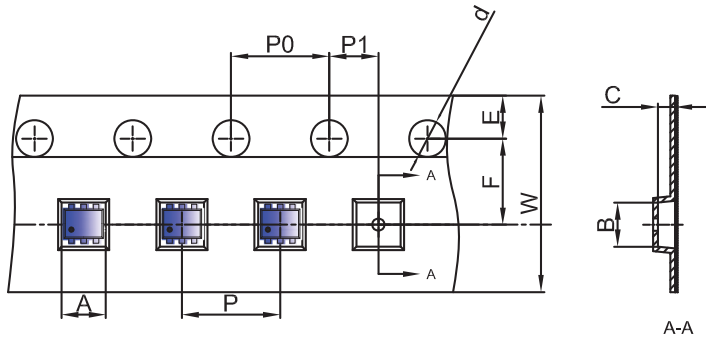
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

# SOT-563 Tape and Reel

## SOT-563 Embossed Carrier Tape

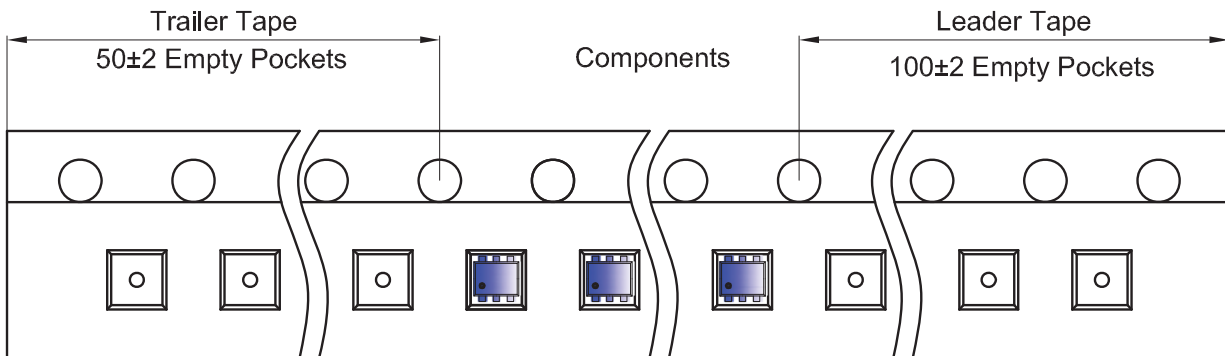


**Packaging Description:**  
 SOT-563 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed 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).

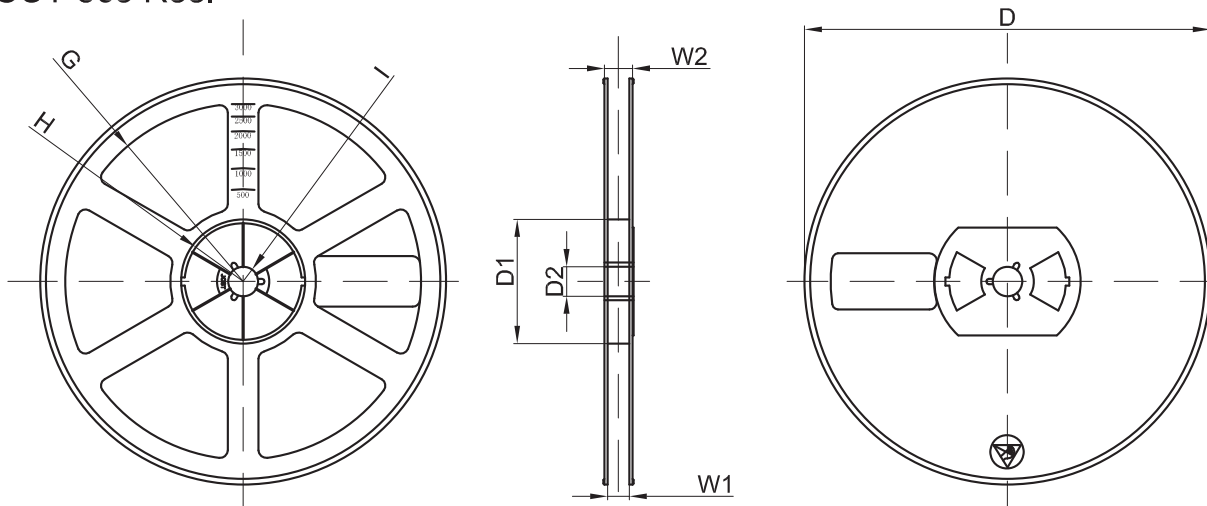
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-563	1.78	1.78	0.69	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
(Tolerance)	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1

## SOT-563 Tape Leader and Trailer



## SOT-563 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
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

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	