

## SOT-523 Plastic-Encapsulate MOSFET

### N-Channel MOSFET

#### Product Summary

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

#### Features

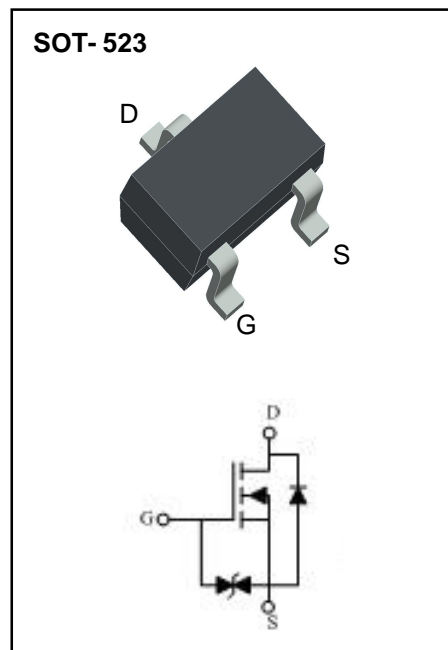
- High density cell design for Low RDS(on)
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected

#### Applications

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

#### Marking

- K72



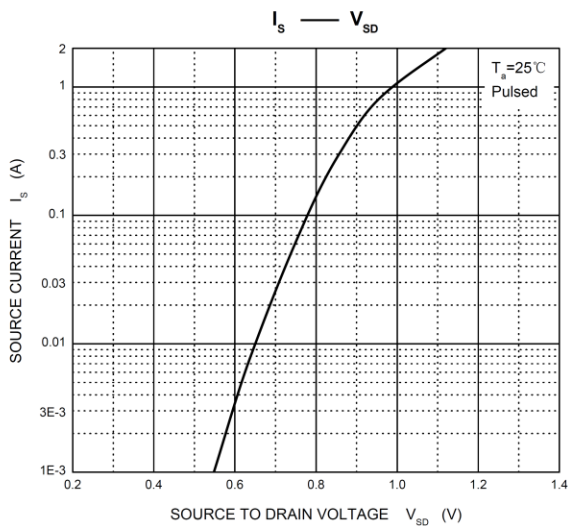
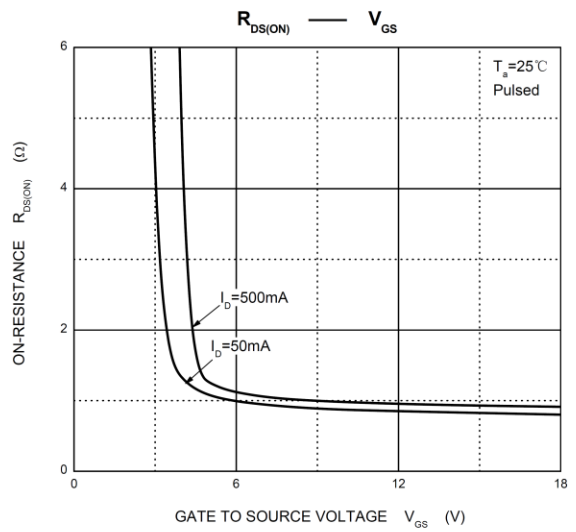
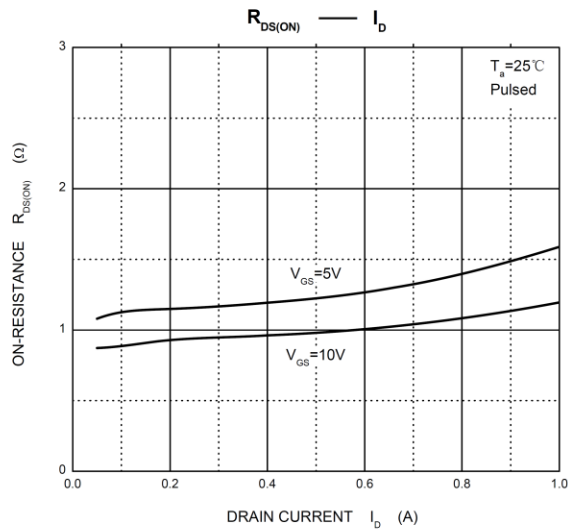
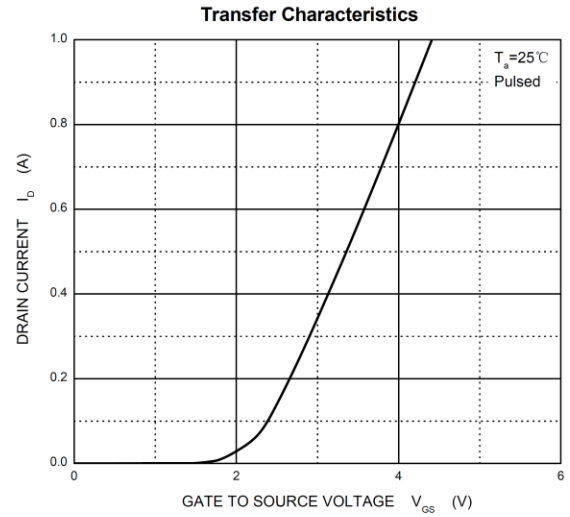
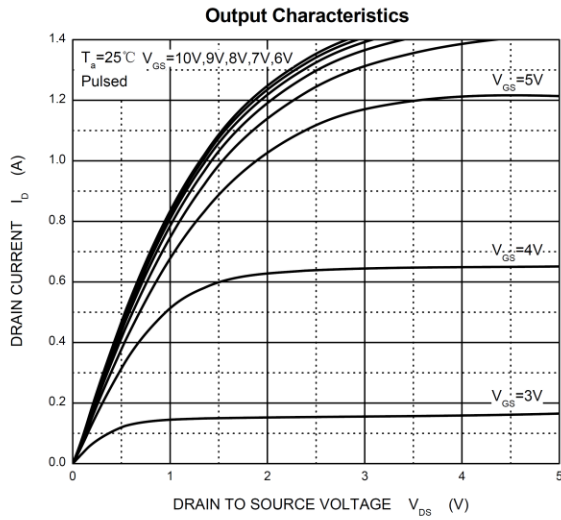
#### Limiting Values (Absolute Maximum Rating)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	115	mA
Power Dissipation	$P_D$	0.150	W
Thermal Resistance from Junction to Ambient	$R_{θJA}$	833	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~ +150	°C

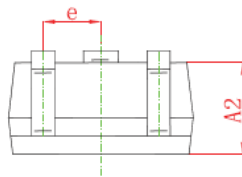
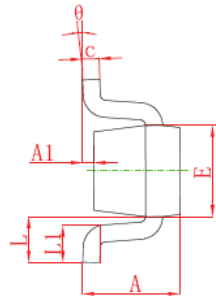
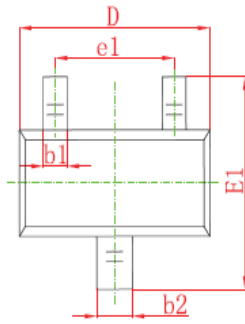
## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0V$			80	nA
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	2.5	V
On-state drain current	$I_{D(on)}$	$V_{GS} = 10V, V_{DS} = 7V$	500			mA
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 500mA$		1.2	5	$\Omega$
		$V_{GS} = 5V, I_D = 50mA$		1.3	7	
On-state drain-source voltage	$V_{DS(on)}$	$V_{GS} = 10V, I_D = 500mA$			3.75	V
		$V_{GS} = 5V, I_D = 50mA$			0.375	
<b>Dynamic characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$			50	pF
Output Capacitance	$C_{oss}$				25	pF
Reverse Transfer Capacitance	$C_{rss}$				5	pF
<b>Switching Characteristics</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 25V, R_L = 50\Omega$			20	ns
Turn-off delay time	$t_{d(off)}$	$I_D = 500mA, V_{GEN} = 10V, R_G = 25\Omega$			40	ns
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	$V_{DS}$	$V_{GS} = 0V, I_S = 115mA$	0.55		1.2	V

# Typical Characteristics

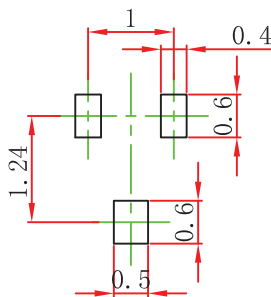


## SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
$\theta$	0°	8°

## SOT-523 Suggested Pad Layout



### Note:

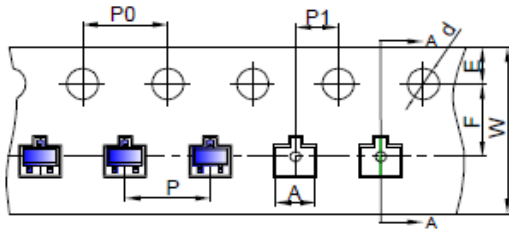
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

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

## SOT-523 Tape and reel

### SOT-523 Embossed Carrier Tape

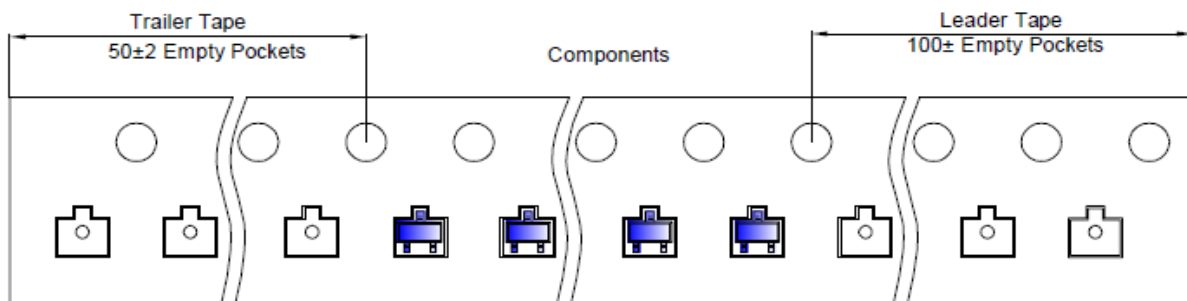


#### Packaging Description:

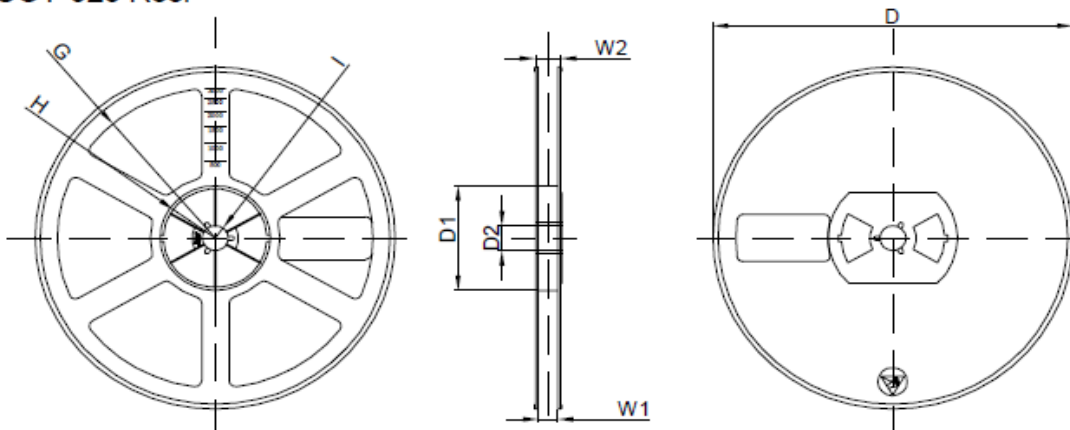
SOT-523 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

### SOT-523 Tape Leader and Trailer



### SOT-523 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	30,000 pcs	203×203×195	120,000 pcs	438×438×220	