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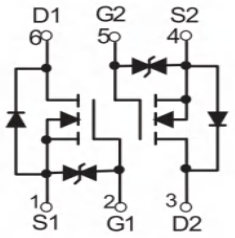
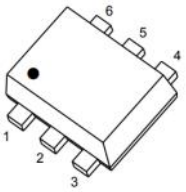
MMBT7002KV Plastic-Encapsulate MOSFETS



N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
60 V	5Ω @10V	340mA
	5.3Ω @4.5V	



SOT563

FEATURE

- High density cell design for Low $R_{DS(on)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING：72K

MOSFET MAXIMUM RATINGS (T_a=25Я unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	340	mA
I_{DM}	Pulsed Drain Current(note1)	800	mA
P_D	Power Dissipation	0.2	W
T_j	Junction Temperature	150	R
T_{stg}	Storage Temperature	-55~+150	R
$R_{ŞJA}$	Thermal Resistance from Junction to Ambient	625	Я/W

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MOSFET ELECTRICAL CHARACTERISTICS

T_a=25 C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
GateThreshold Voltage (note 2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =1mA	1	1.3	2.5	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =48V,V_{GS} = 0V			1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±10	μA
Drain-Source On-Resistance (note 2)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =200mA		2.3	5.3	R
		V_{GS} =10V, I_D =500mA		1.5	5	R
DYNAMIC PARAMETERS (note 3)						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz			40	pF
Output Capacitance	C_{oss}				30	pF
Reverse Transfer Capacitance	C_{rss}				10	pF
SWITCHING PARAMETERS(note 3)						
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DD}=50V, R_G=50ð			10	ns
Turn-off Delay Time	$t_{d(off)}$	R_{GS}=50ð, R_L=250ð			15	ns
Reverse Recovery Time	t_{rr}	V_{GS}=0V,I_S=300mA,V_R=25V, dIs/dt=-100A/us		30		ns
Recovered Charge	Qr	V_{GS}=0V,I_S=300mA,V_R=25V dIs/dt=-100A/us		30		nC
DRAIN-SOURCE DIODE						
Diode Forward Voltage(note 2)	V_{SD}	I_S=300mA, V_{GS} = 0V			1.5	V
Continuous Diode Forward Current	I_S				0.2	A
Pulsed Diode Forward Current(note1)	I_{SM}				0.53	A

Notes :

1. Repetitive rating - Pluse width limited by junction temperature.
2. Pulse Test : Pulse width□300μs, duty cycle” 2%.
3. Guaranteed by design, not subject to production testing.

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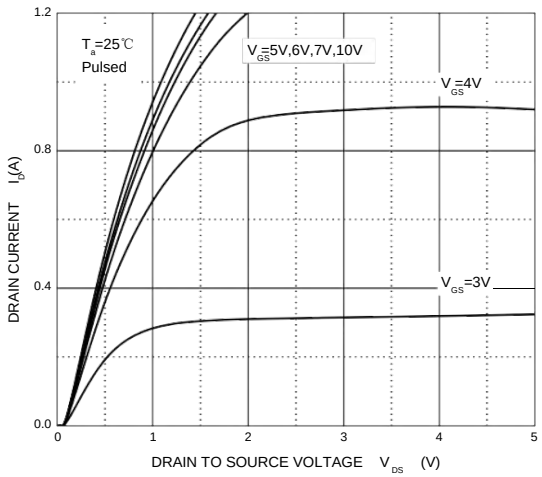
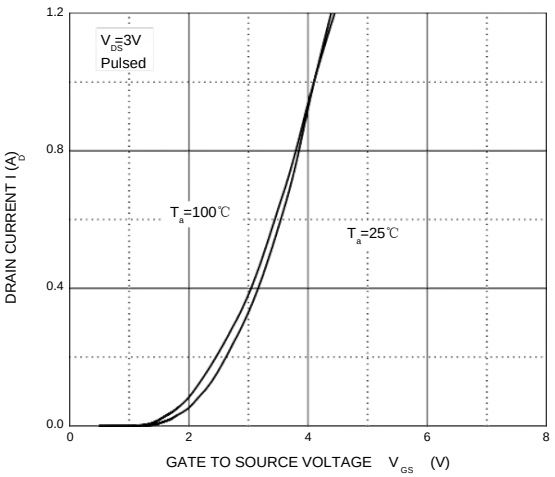
Typical Characteristics

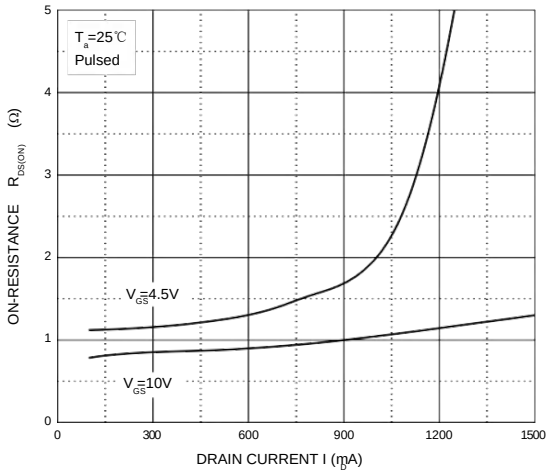
Output Characteristics



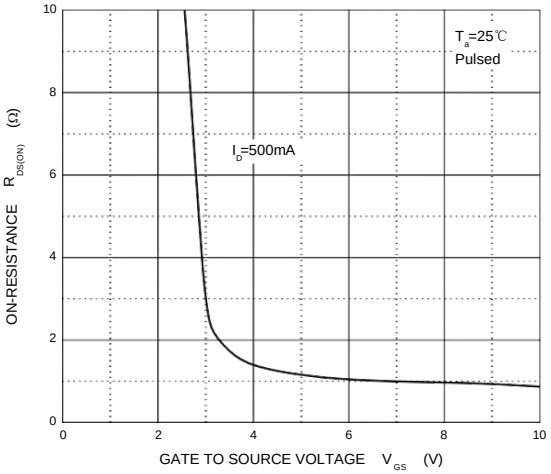
Transfer Characteristics



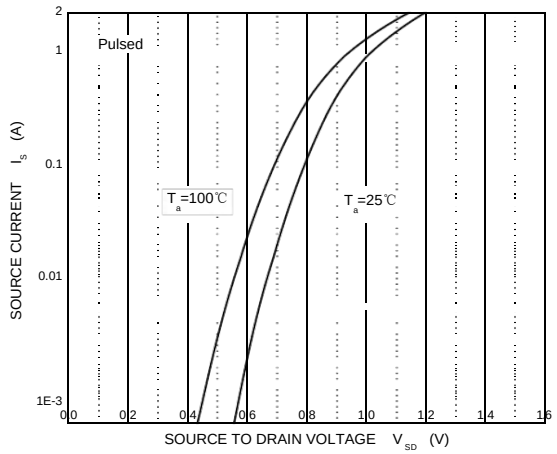
$R_{DS(ON)}$ —— I_D



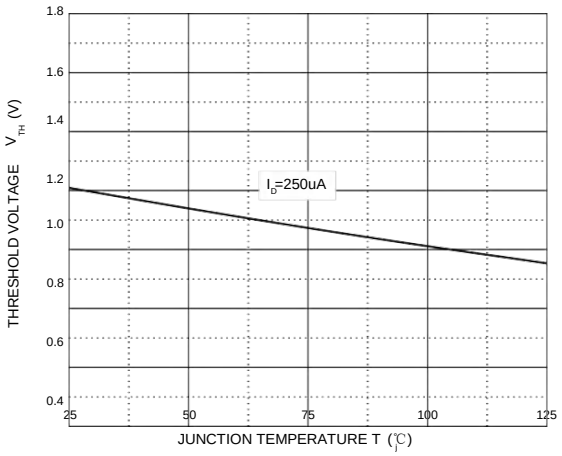
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage



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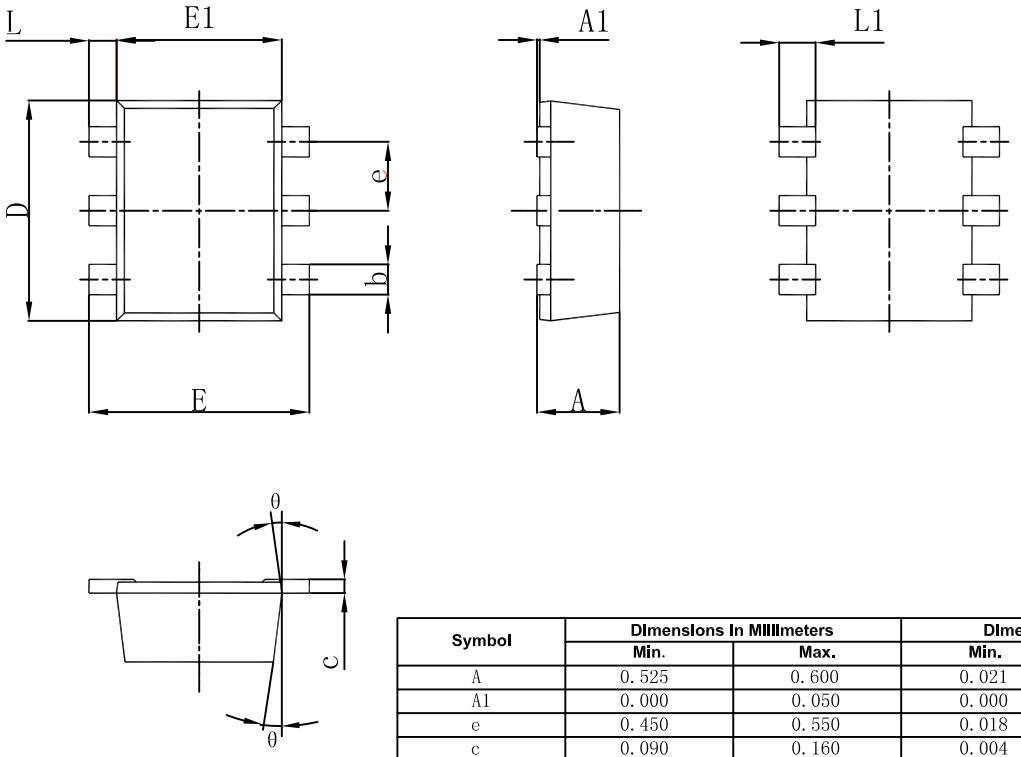
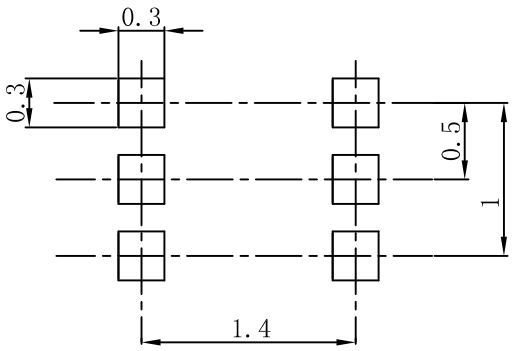
SOT-563 Package Outline Dimensions



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
θ	7 °REF.		7 °REF.	

SOT-563 Suggested Pad Layout



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

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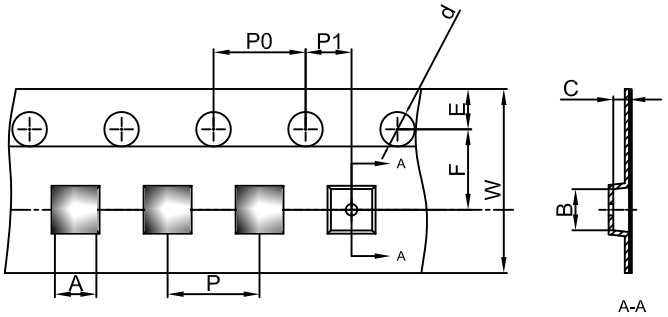
SOT-563 Embossed Carrier Tape



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

SOT-563 Tape Leader and Trailer