Descriptions

This 60V 0.15A N-channel enhancement mode field effect transistor in a SOT-523 plastic package.

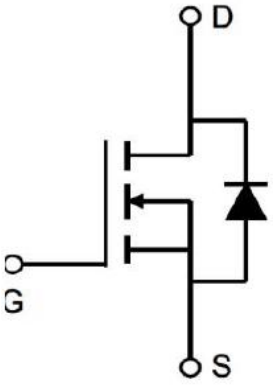
Features

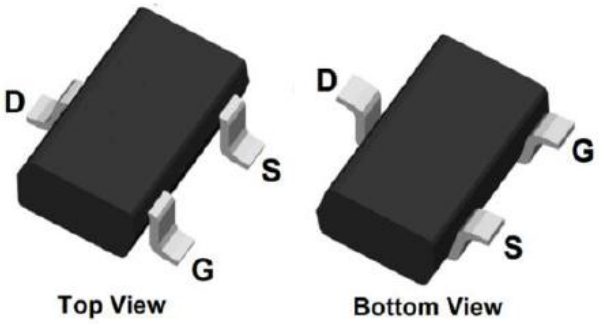
- Advanced Trench Process Technology
- Low Threshold Voltage
- Fast Switching Speed
- Halogen-Free & Lead-Free

Application

- Load Switch for Portable Devices
- Voltage controlled small signal switch

Equivalent Circuit & Pinning





Marking

See Marking Instructions

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.15	A
Peak Drain Current, Pulsed [1)]	I_{DM}	1.2	A
Power Dissipation	P_{tot}	0.27	W
Operating Junction	T_J	-55~150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient[1)]	$R_{\theta JA}$	450	℃/W

Note：

1) Pulse width ≤100us, duty cycle ≤1%, limited by Tjmax.

2) Device mounted on FR-4 substrate PC board, 2ozcopper, with 1-inch square copper plate in still air.

Characteristics(Ta = 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at VGS=0V, ID=250μA	BVDSS	60			V
Drain-Source Leakage Current at VDS =60V, VGS =0V	IDSS			1	μA
Gate Leakage Current at VDS =0V, VGS =±20V	IGSS			±100	nA
Gate-Source Threshold Voltage atVDS = VGS, ID = 250 μA	VGS(th)	1		2	V
Drain-Source On-State Resistance at VGS = 10 V, ID = =500mA at VGS = 5V, ID =500mA	RDS(on)		2.8 3.8	5 5.3	Ω
DYNAMIC PARAMETERS					
Gate resistance at VDS = 0 V, VGS=0V, f = 1 MHz	Rg		2		Ω
Forward Transconductance at VDS =10V, ID =200mA	gfs		80		S
Input Capacitance at VDS=25V, VGS=0V, f=1MHz	Ciss		22		pF
Output Capacitance at VDS=25V, VGS=0V, f=1MHz	Coss		11		pF
Reverse Transfer Capacitance at VDS=25V, VGS=0V, f=1MHz	Crss		2		pF
Gate charge total at VDS =10 V, IDS = 0.25 A, VGS = 4.5V	Qg		0.3		nC
Gate to Source Charge atVDS =10V, IDS = 0.25 A, VGS = 4.5 V	Qgs		0.2		nC
Gate to Drain Charge at VDS =10 V, IDS = 0.25 A, VGS = 4.5 V	Qgd		0.08		nC
Turn-On Delay Time at V_{DD}=30V, I_D = 0.2 A, R_g = 25 Ω, V_{Gen}=10V, R_g = 150 Ω	td(on)		7		nS
Turn-Off Delay Time at V_{DD}=30V, I_D = 0.2 A, R_g = 25 Ω, V_{Gen}=10V, R_g = 150 Ω	td(off)		11		nS

Electrical Characteristics Curves

Fig. 1 - Output Characteristics

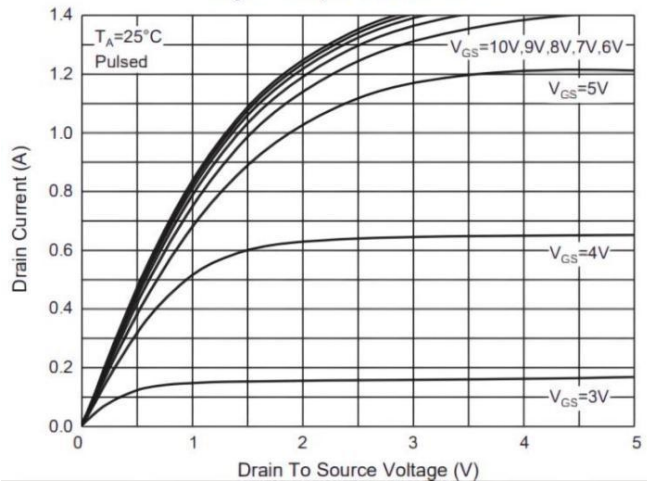


Fig. 2 - Transfer Characteristics

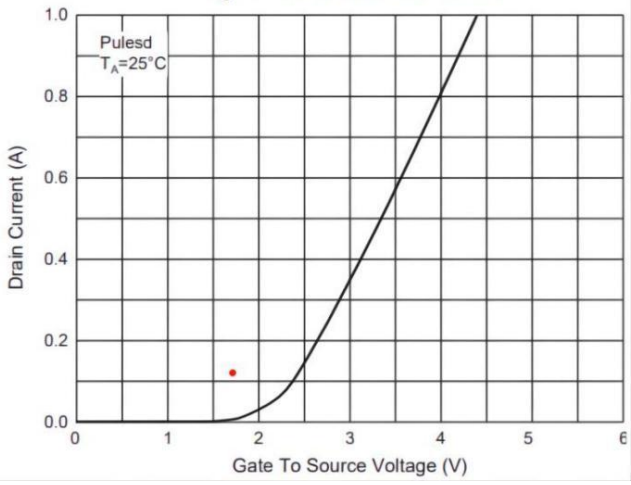


Fig. 3 - $R_{DS(ON)}$—I_D

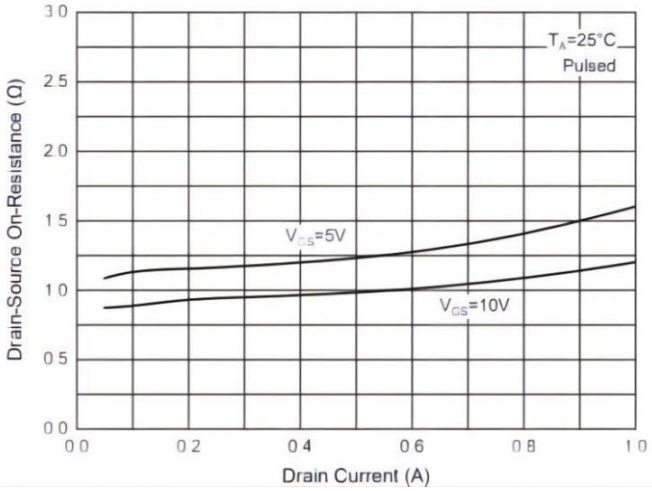


Fig. 3 - $R_{DS(ON)}$—V_{GS}

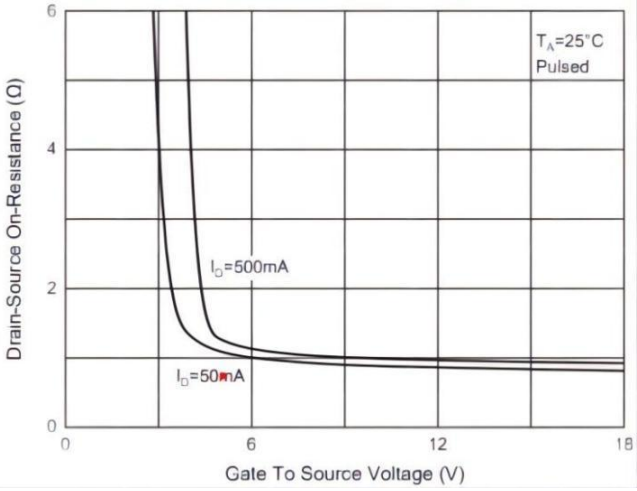
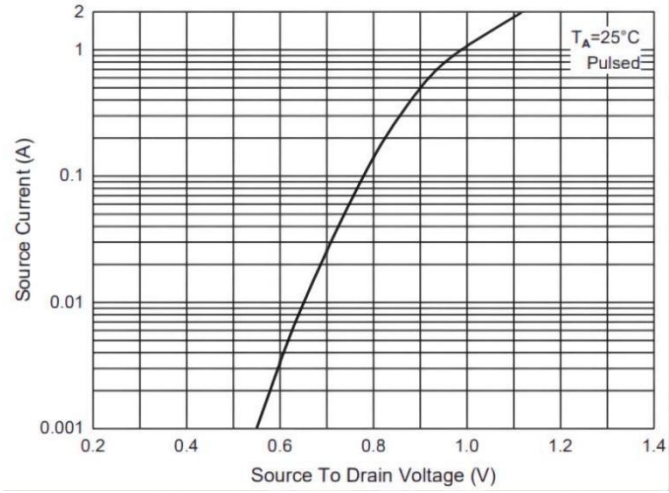


Fig. 5 - I_S—V_{SD}



Test Circuits

Fig.1-1 Switching times test circuit

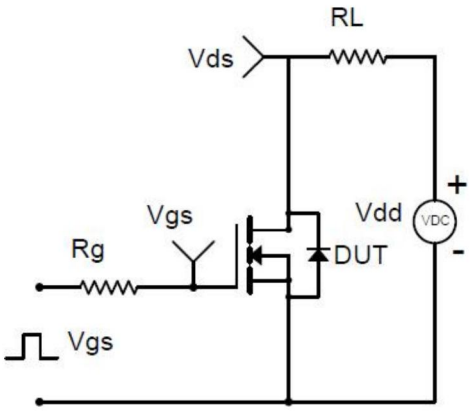


Fig.1-2 Switching Waveform

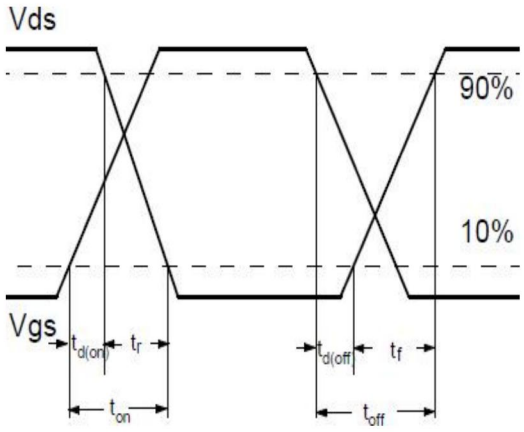


Fig.2-1 Gate charge test circuit

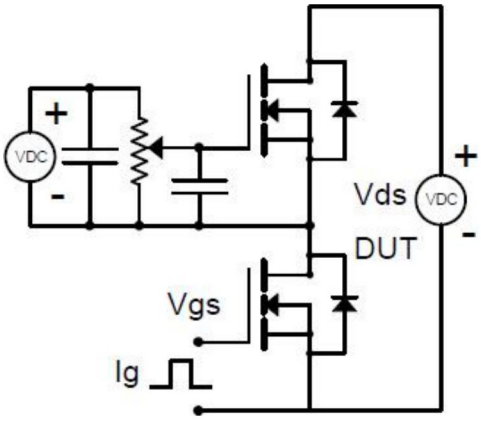


Fig.2-2 Gate charge waveform

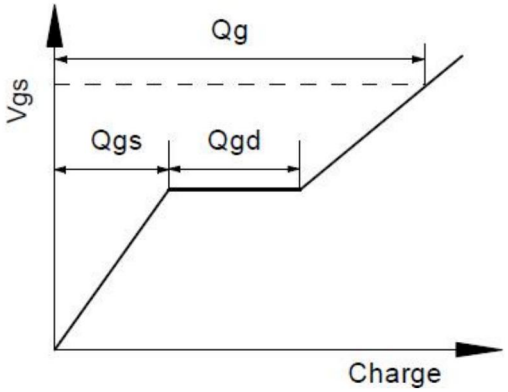


Fig.3-1 Avalanche test circuit

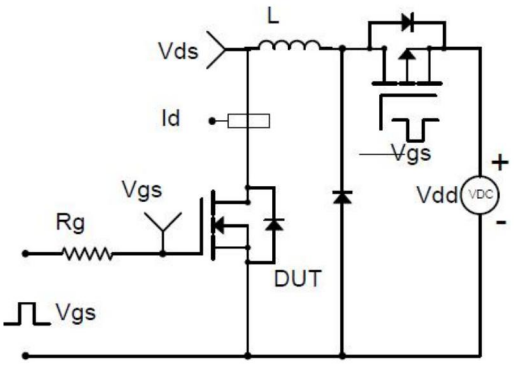
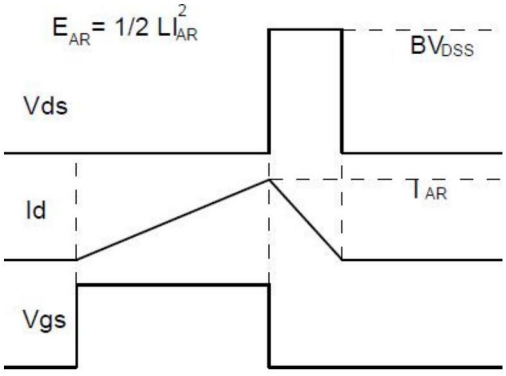
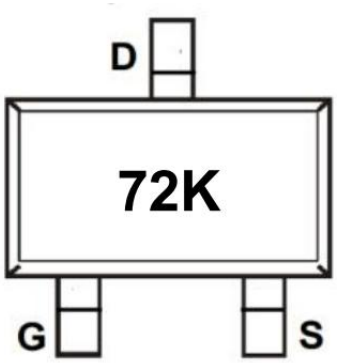


Fig.3-2 Avalanche waveform

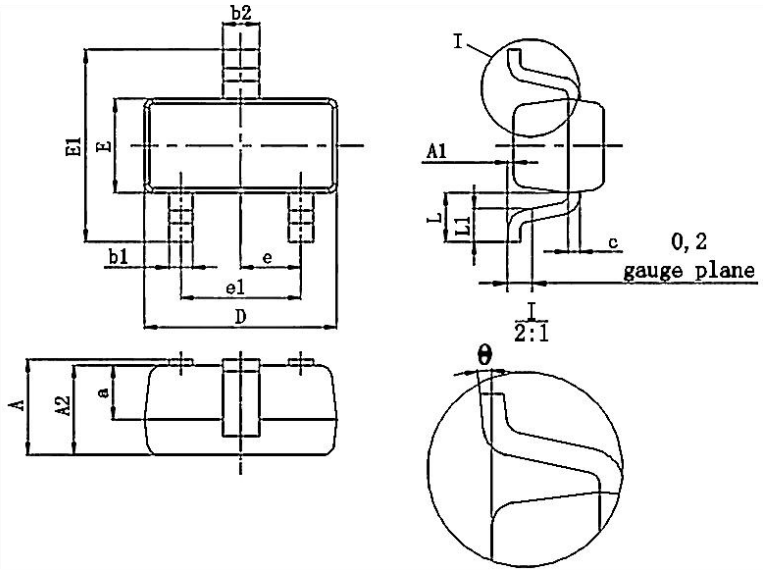


Marking imformation



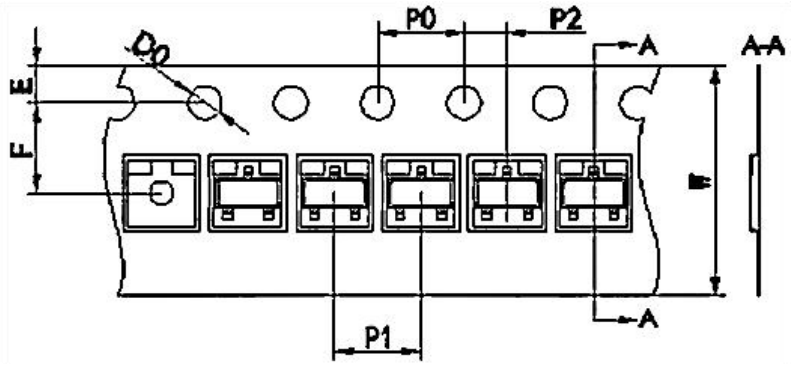
Marking: 72K

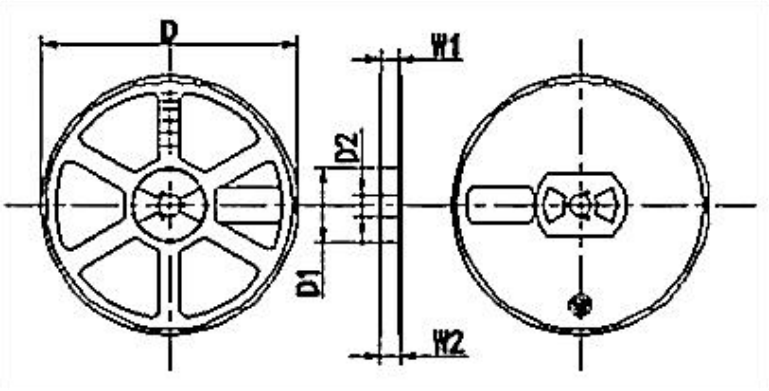
Package Outline Dimensions (Units: mm)



符号	尺寸		符号	尺寸		符号	尺寸	
	Min	Max		Min	Max		Min	Max
A	0.7	0.9	E	0.7	0.9	b2	0.25	0.35
A1	0	0.1	E1	1.45	1.75	c	0.08	0.15
A2	0.7	0.8	e	(0.5)		L	(0.4)	
a	(0.45)		e1	0.9	1.1	L1	0.2	0.4
D	1.5	1.7	b1	0.15	0.25	θ	0°	8°

Emboss Carrier Tape&Reel





Symbol	Dimension in Millimeters
Tape	
D0	1.50+0.10/-0.00
E	1.75±0.10
F	3.50±0.10
P0	4.00±0.10
P1	2.00±0.10
P2	2.00±0.10
W	8.00+0.3/-0.1
Reel	
D	178.0±2.00
D1	54.40±1.00
D2	13.00±1.00
W1	9.50±1.00
W2	12.30±1.00