Descriptions

This is N-Channel Enhancement Mode MOSFET in a SOT-523 Plastic Package.

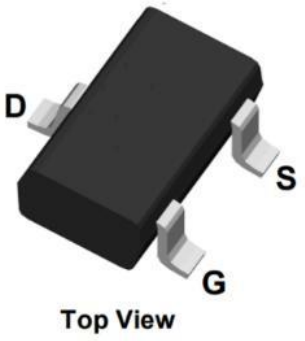
Features

- Advanced Trench Process Technology
- Low Threshold Voltage
- Fast Switching Speed
- Halogen-Free & Lead-Free
- N-Channel Switch with Low RDS(on)

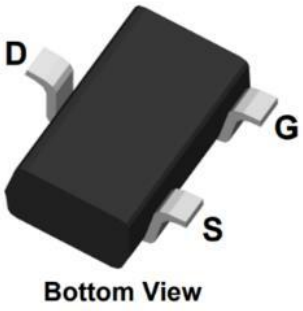
Application

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

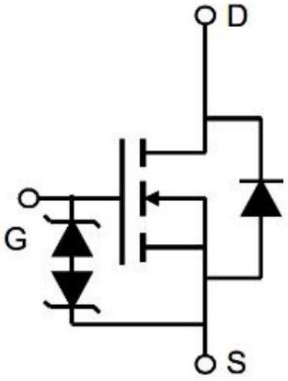
Schematic & PIN Configuration



Top View



Bottom View



Marking

See Marking Instructions

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	20	V
Gate-Source Voltage	VGS	±12	V
Continuous Drain Current	ID	0.75	A
Peak Drain Current, Pulsed 1)	IDM	3.0	A
Power Dissipation 2)	Ptot	0.2	W
Operating Junction	TJ	150	℃
Storage Temperature Range	Tstg	-55~150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient 2)	$R_{\theta JA}$	633	℃/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 at Ta = 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at ID = 250 μA	BVDSS	20			V
Drain-Source Leakage Current at VDS = 20 V	IDSS			1	μA
Gate Leakage Current at VGS = ± 10 V	IGSS			±10	μA
Gate-Source Threshold Voltage at VDS = VGS, ID = 250 μA	VGS(th)	0.35		1.1	V
Drain-Source On-State Resistance at VGS = 4.5 V, ID = 0.65 A at VGS = 2.5 V, ID = 0.55 A at VGS = 1.8 V, ID = 0.45 A	RDS(on)		190 260 390	380 450 800	mΩ
DYNAMIC PARAMETERS					
Forward Transconductance at VDS = 10 V, ID =800mA	gfs	1.0			S
Input Capacitance at VGS = 0 V, VDS = 16 V, f = 1 MHz	Ciss		79		pF
Output Capacitance at VGS = 0 V, VDS = 16 V, f = 1 MHz	Coss		13		pF
Reverse Transfer Capacitance at VGS = 0 V, VDS = 16 V, f = 1 MHz	Crss		9		pF
Gate charge total at VDS =10 V, ID =0.9 A, VGS =4.5 V	Qg		1		nC
Gate to Source Charge at VDS =10 V, ID =0.9 A, VGS =4.5 V	Qgs		0.28		nC
Gate to Drain Charge at VDS =10 V, ID =0.9 A, VGS =4.5 V	Qgd		0.22		nC
Turn-On Delay Time at VGS = 4.5 V, VDS = 10 V, ID = 0.5 A, Rg = 10 Ω	td(on)		6.7		ns
Turn-On Rise Time at VGS = 4.5 V, VDS = 10 V, ID = 0.5 A, Rg = 10 Ω	tr		4.8		ns
Turn-Off Delay Time at VGS = 4.5 V, VDS = 10 V, ID = 0.5 A, Rg = 10 Ω	td(off)		17.3		ns
Turn-Off Fall Time at VGS = 4.5 V, VDS = 10 V, ID = 0.5 A, Rg = 10 Ω	tf		7.4		ns
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at IF = 150 mA, VGS = 0 V	VDS			1.2	V
Body Diode Reverse Recovery Time at IF = 3.6 A, di/dt = 100 A / μs	trr		7.5		ns
Body Diode Reverse Recovery Charge at IF = 3.6 A, di/dt = 100 A / μs	Qrr		2.5		nC

Electrical Characteristics Curves

Fig. 1 - Output Charact eristics

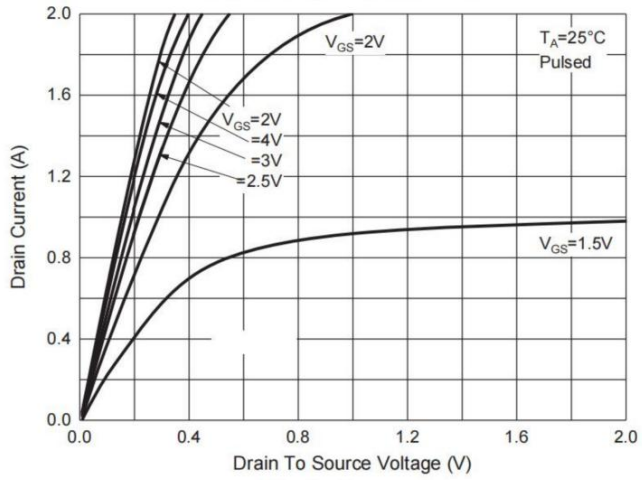


Fig. 2 - Transfer Characteristics

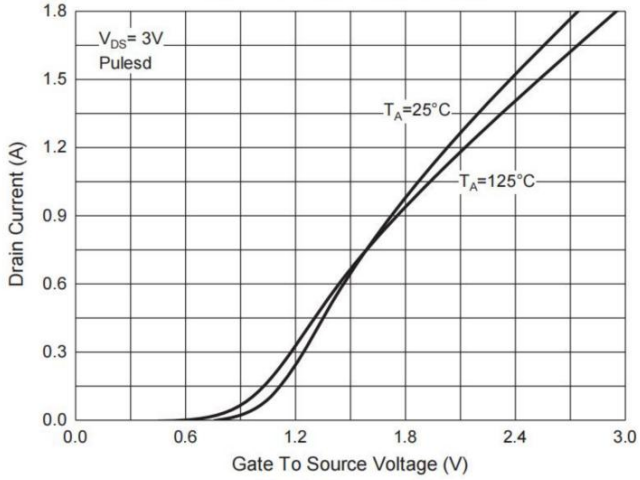


Fig. 3 - $R_{DS(ON)}$—I_D

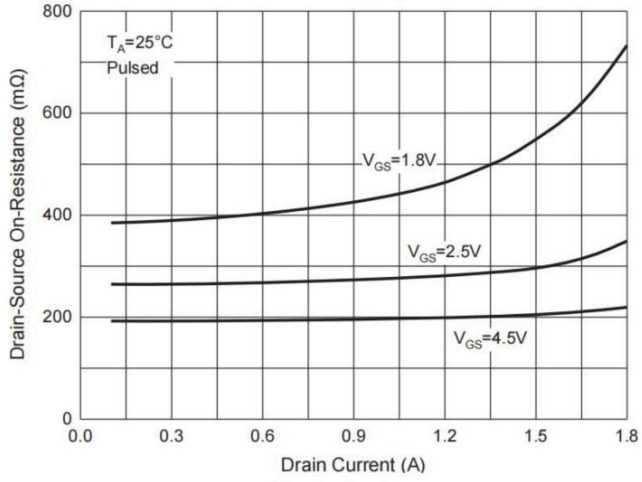


Fig. 4 - $R_{DS(ON)}$—V_{GS}

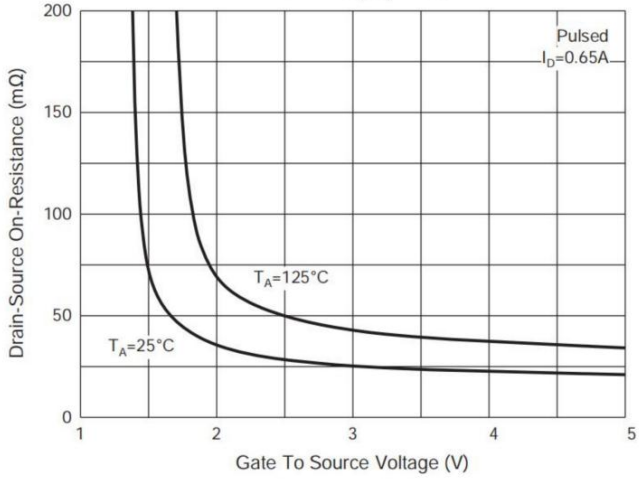


Fig. 3 - I_S—V_{SD}

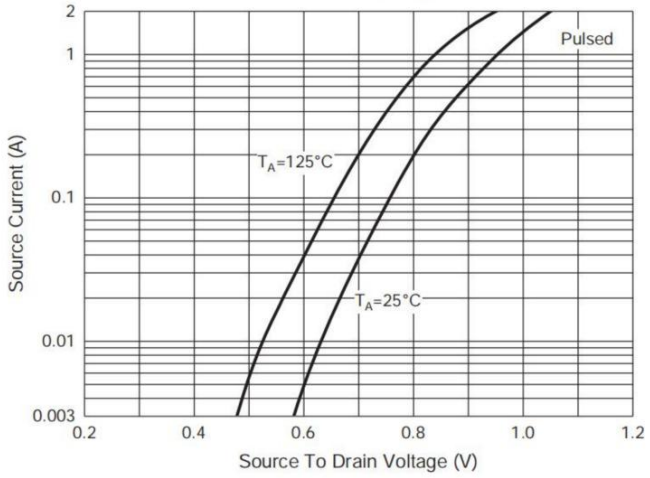
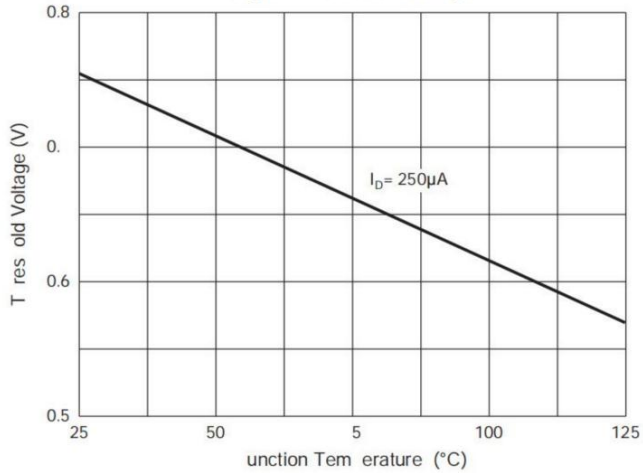


Fig. 6 - T res old Voltage



Test Circuits

Fig.1-1 Switching times test circuit

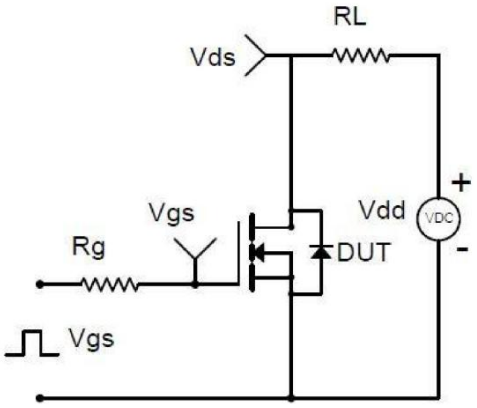


Fig.1-2 Switching Waveform

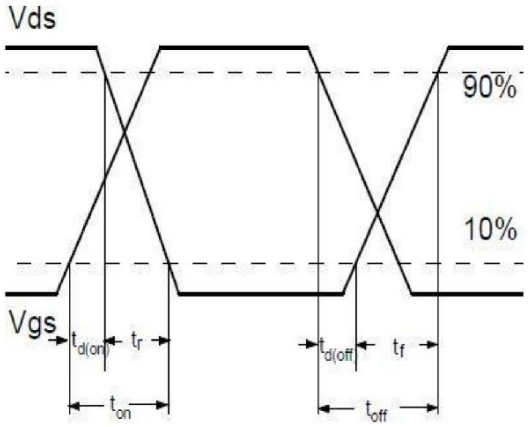


Fig.2-1 Gate charge test circuit

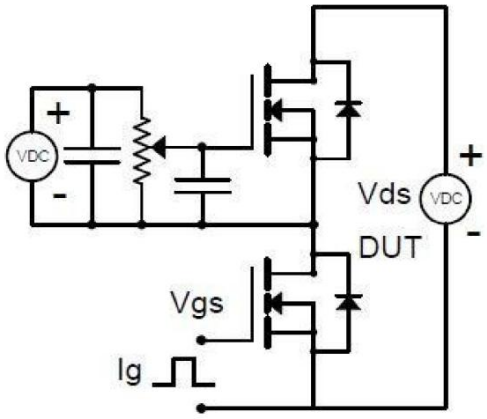


Fig.2-2 Gate charge waveform

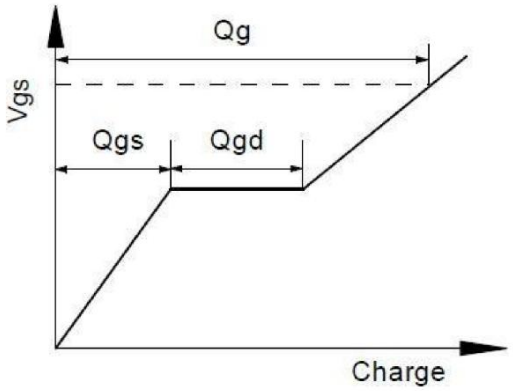


Fig.3-1 Avalanche test circuit

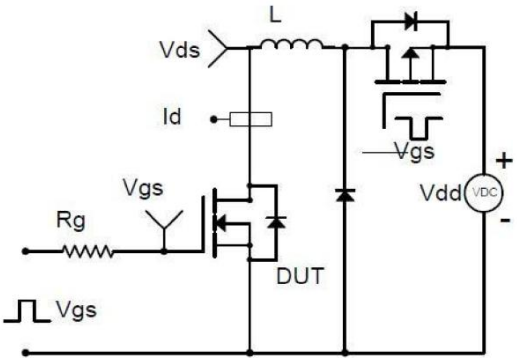
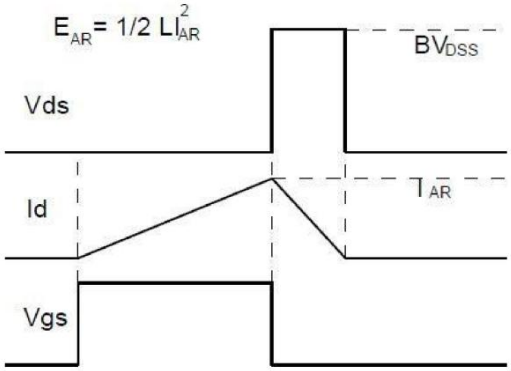
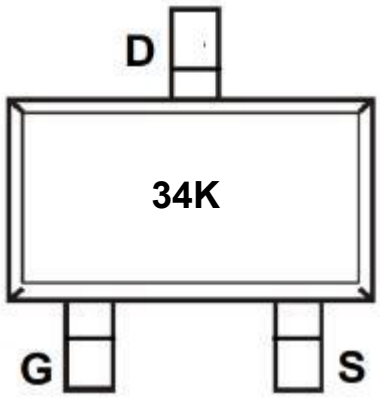


Fig.3-2 Avalanche waveform

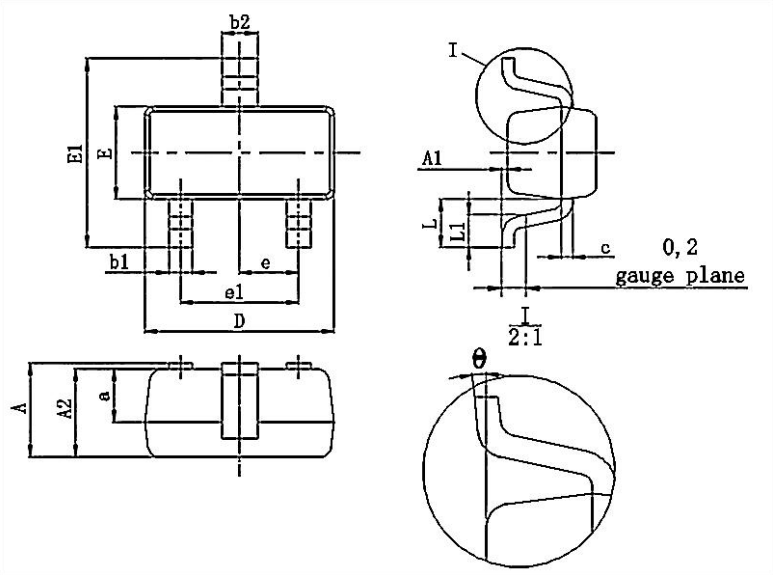


Marking imformation



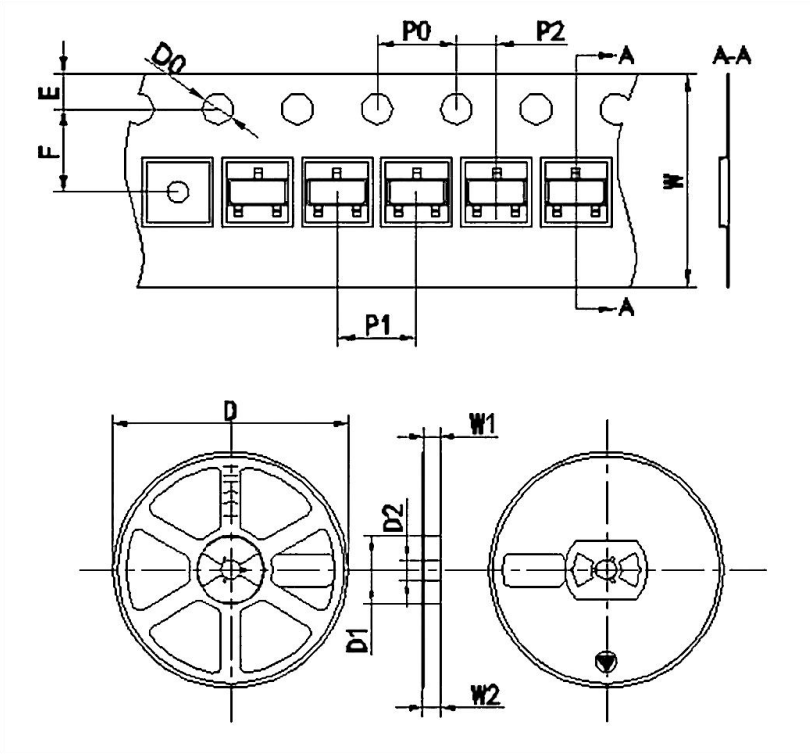
Marking: 34K

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