

N-Channel Enhancement Mode MOSFET

1 Features

- $V_{DS} = 60V$, $I_D = 115mA$
- $R_{DS(ON)} < 5\Omega @ V_{GS} = 10V$
- $R_{DS(ON)} < 7\Omega @ V_{GS} = 4.5V$
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package

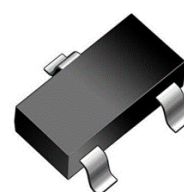
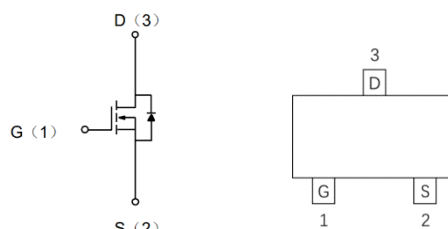
2 Applications

- PWM applications
- Load switch
- Power management

3 Description

The SLMT57002 provide the best combination of fast switching, low on-resistance and cost-effectiveness. The MOSFET uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages is low. This device is suitable for use as a load switch or in PWM applications.

4 Pin Configuration and Top View



SOT-523

5 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLAMT57002	SOT-523	1.60 mm x 1.60mm

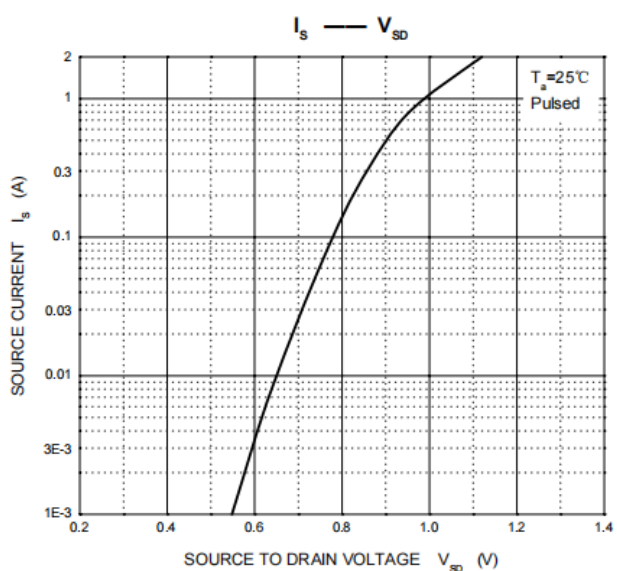
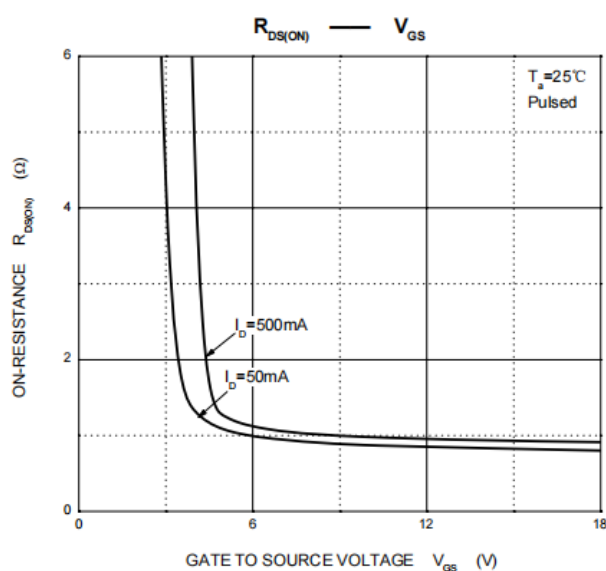
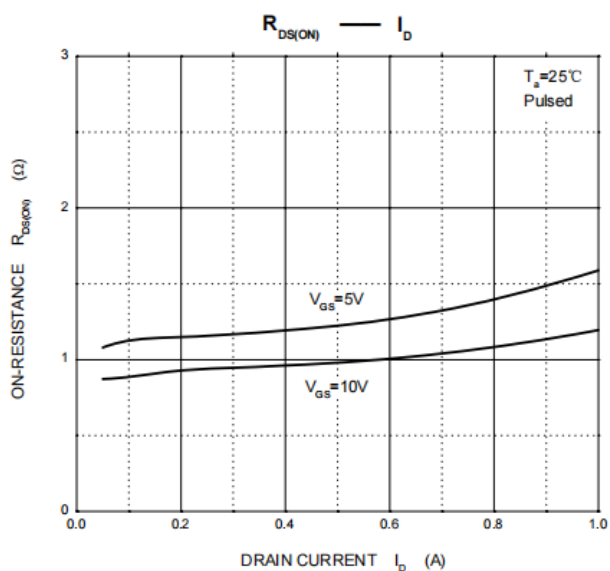
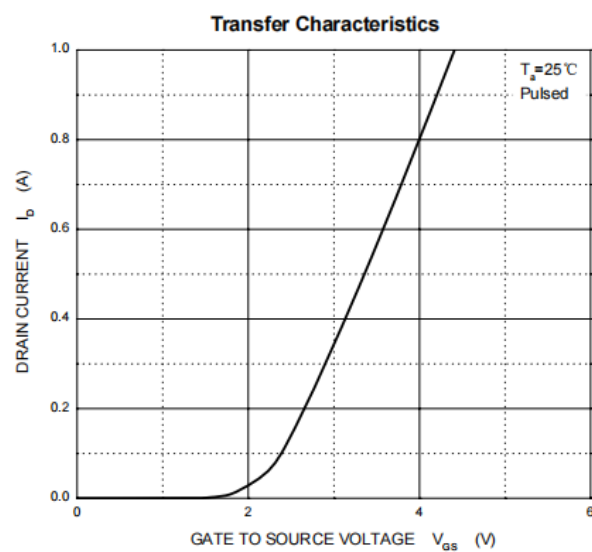
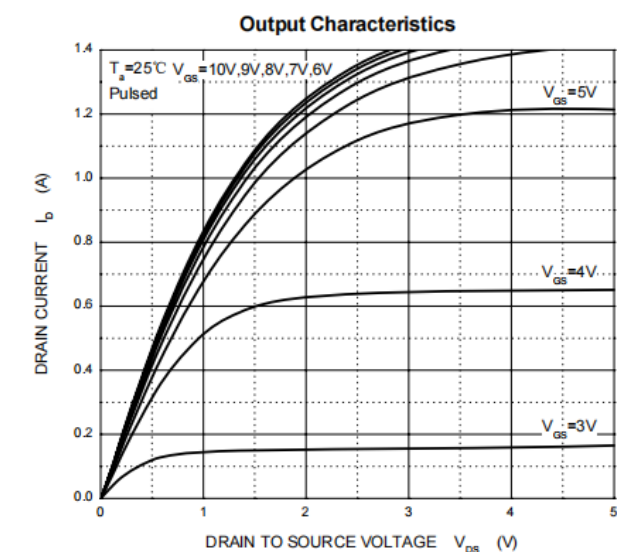
6 Absolute maximum Ratings @25°C

RATING	SYMBOL	VALUE	UNITS
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.115	A
Total power dissipation	P_D	200	mW
Channel temperature	T_J	150	°C
Range of storage temperature	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W

7 Electrical characteristics (@25°C unless otherwise specified)

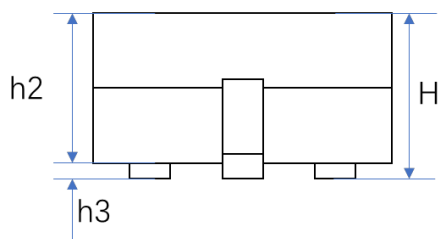
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.6	2.5	V
Drain Cut Off Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 10	μA
Drain-Source ON Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 100mA$		0.9	5	Ω
		$V_{GS} = 4.5V, I_D = 50mA$		1.1	7	Ω
Forward Transconductance	g_{FS}	$V_{DS} = 10V, I_D = 115mA$	80	-	-	ms
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V,$ $V_{GS} = 0V,$ $f = 1.0MHz$		50		pF
Reverse Transfer Capacitance	C_{RSS}			5		pF
Output Capacitance	C_{OSS}			25		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 25V, V_{GEN} = 10V$ $R_G = 25\Omega, R_L = 50\Omega,$ $I_D = 115mA$		20		ns
Turn-Off Delay Time	$t_{d(off)}$			40		ns
Rise Time	t_r			32		ns
Fall Time	t_f			15		ns
Gate Resistance	R_g	$f = 1 MHz$		-		Ω
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 0.115A, V_{GS} = 0V$			1.2	V

8 Typical Characteristics

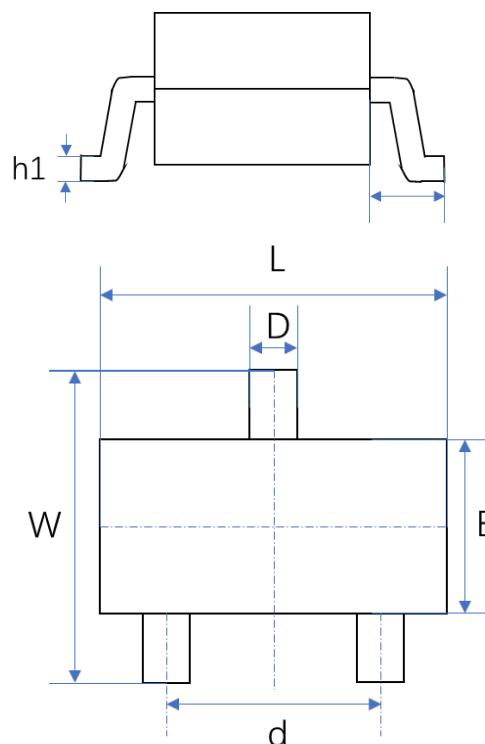


9 Product dimension

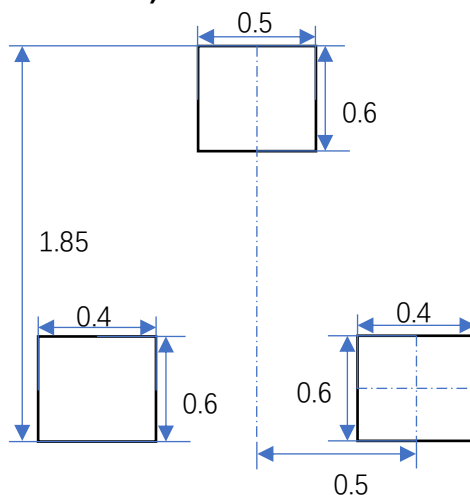
SOT-523



DIM	UNITS (mm)		
	MIN.	TYP.	MAX.
L	1.50	1.60	1.70
W	1.45	1.60	1.75
H	0.70	0.80	0.90
h1	0.10	0.15	0.20
h2	0.70	0.75	0.80
h3	-	-	0.10
E	0.70	0.80	0.90
d	0.90	1.00	1.10
d1	-	0.40	-



10 PCB Layout Footprints (Units: mm)



11 Ordering Information

Part Number	Packaging	Reel Size
SLMT57002	3000/Tape & Reel	7 inch