

N-Channel Enhancement Mode MOSFET

1 Features

- $V_{DS} = 60V$, $I_D = 0.115A$
- $R_{DS(ON)} < 3\Omega @ V_{GS}=10V$
- High density cell design for extremely low $R_{DS(ON)}$
- Lead free product is acquired
- Conventional SOT-23 Package

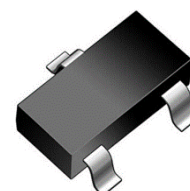
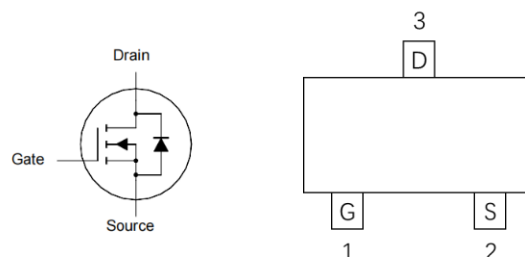
2 Applications

- Direct logic-level interface: TTL/CMOS
- Drivers: relays, solenoids, lamps, hammers, display, memories, transistors, etc. Load switch
- Battery operated systems
- Solid-state relays

3 Description

The SLMT37002 provide the best combination of fast switching, low on-resistance and cost-effectiveness. The MOSFET is the N-Channel enhancement mode power field effect transistors with high cell density, trench technology. This high density process and design have been optimized switching performance and especially tailored to minimize on-state resistance.

4 Pin Configuration and Top View



SOT-23

5 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLMT37002	SOT-23	2.90 mm x 2.40mm

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	115	mA
Pulsed Drain Current	I_{DP}	800	mA
Total power dissipation	P_D	0.2	W
Channel temperature	T_J	-55 to +150	°C
Range of storage temperature	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	546	°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		2.5	V
Drain Cut Off Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			0.1	μA
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.5A$			3	Ω
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 0.2A$			4	Ω
Drain-Source On-Voltage	$V_{DS(ON)}$	$V_{GS} = 10V, I_D = 0.5A$			3.75	V
		$V_{GS} = 5V, I_D = 0.05A$			1.5	V
Forward Transconductance	g_{FS}	$V_{DS} = 10V, I_D = 200mA$	80			ms
Dynamic Characteristics						
Input Capacitance	C_{ISS}	$V_{DS} = 25V,$ $V_{GS} = 0V,$ $f = 1MHz$			50	pF
Reverse Transfer Capacitance	C_{RSS}				5	pF
Output Capacitance	C_{OSS}				25	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30V, R_L = 150\Omega,$ $I_D = 0.2A, V_{GS} = 10V,$ $R_{GEN} = 25\Omega$			20	ns
Turn-Off Delay Time	$t_{d(off)}$				20	ns

8 Typical Characteristics

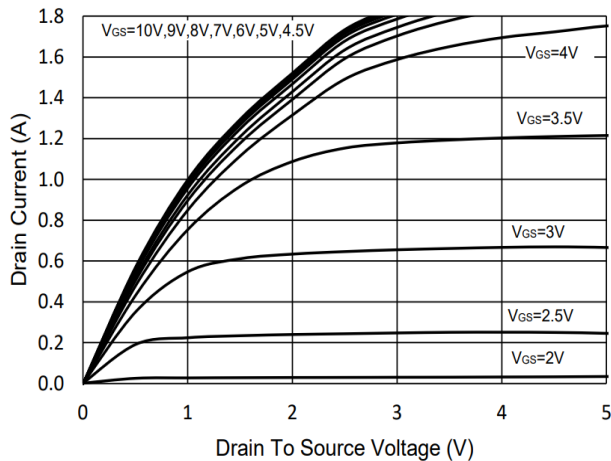


Fig 1. Typical Output Characteristics

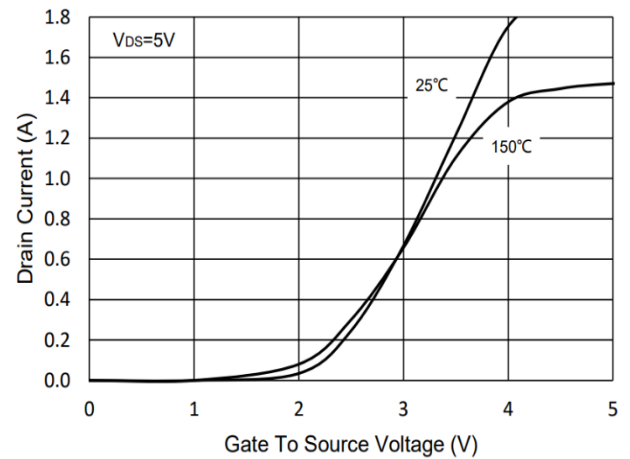


Fig 2. Transfer Characteristic

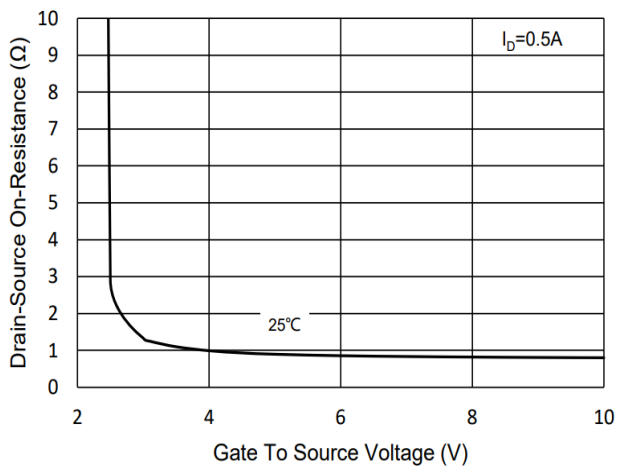


Fig 3. Gate-Source on Resistance

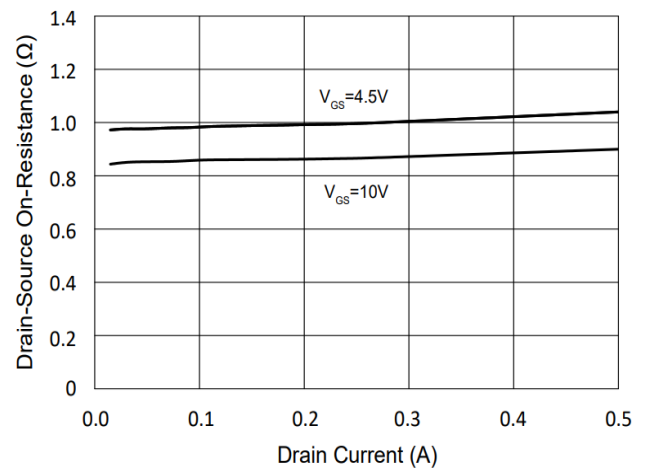


Fig 4. Rdson vs. Drain Current Characteristics

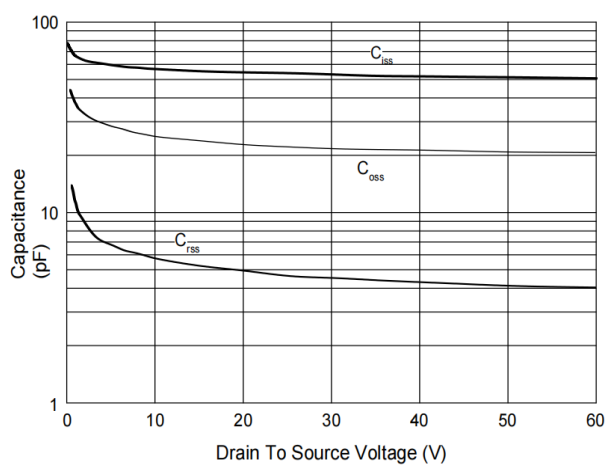


Fig 5. Capacitance Characteristics

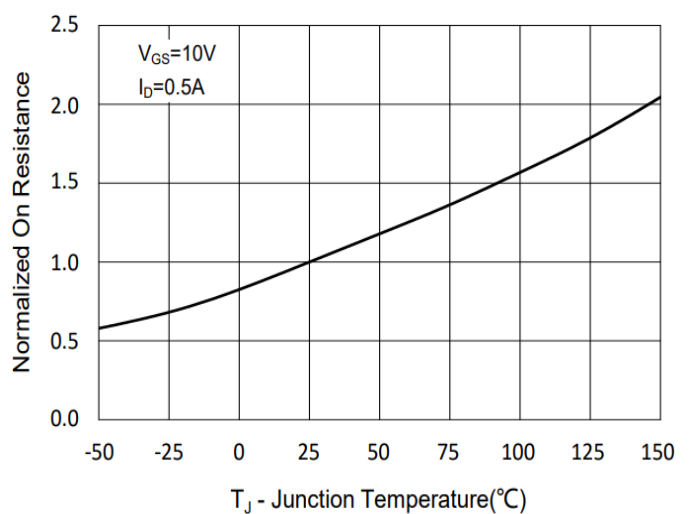
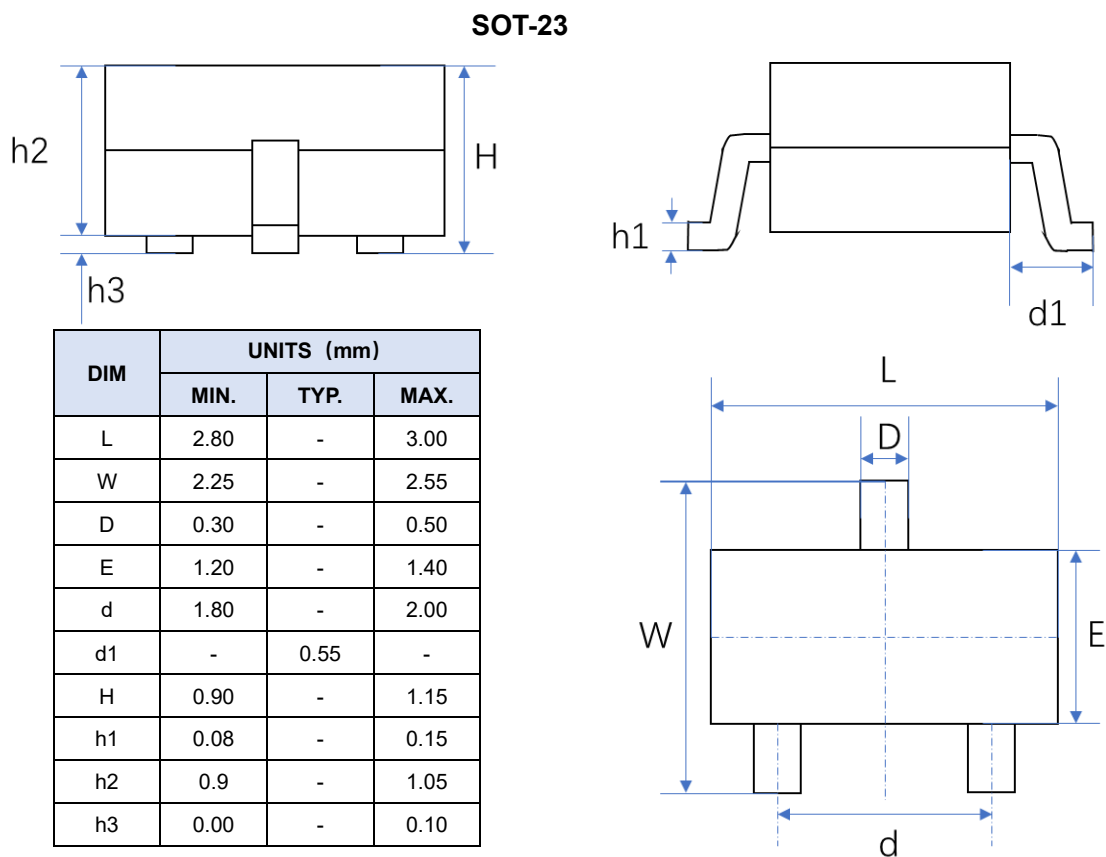
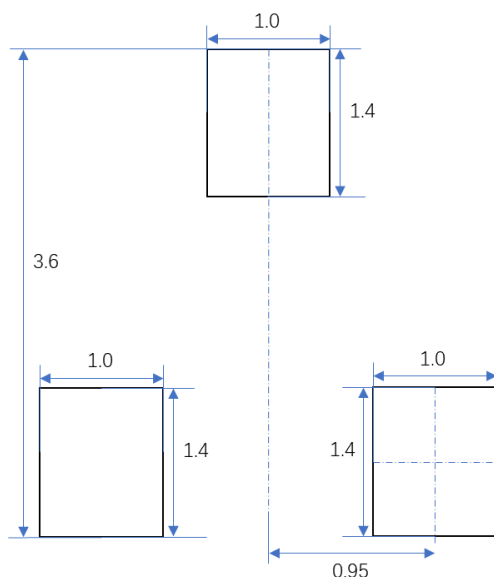


Fig 6. Normalized On Resistance Characteristics

9 Product dimension



10 PCB Layout Footprints (Units: mm)



11 Ordering Information

Part Number	Packaging	Reel Size
SLMT37002	3000/Tape & Reel	7 inch