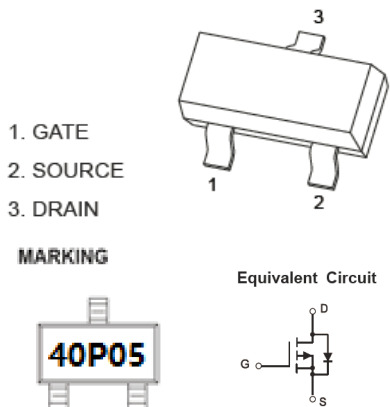


SOT-23

特征 Features

- -40V,5A
 $R_{ds(on)} < 85m\Omega$ @VGS = -10V TYP: 65 m Ω
 $R_{ds(on)} < 120m\Omega$ @VGS = -4.5V TYP: 90 m Ω
- Advanced Trench Technology
- Lead free product is acquired
- Interfacing Switching
- Load Switching
- Power management

机械数据 Mechanical Data

- SOT-23 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.

极限值和温度特性(TA = 25°C 除非另有规定)

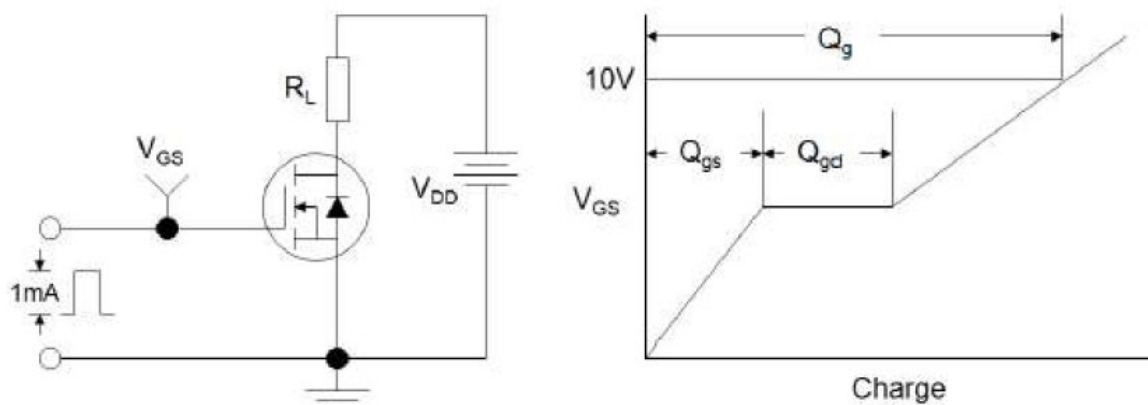
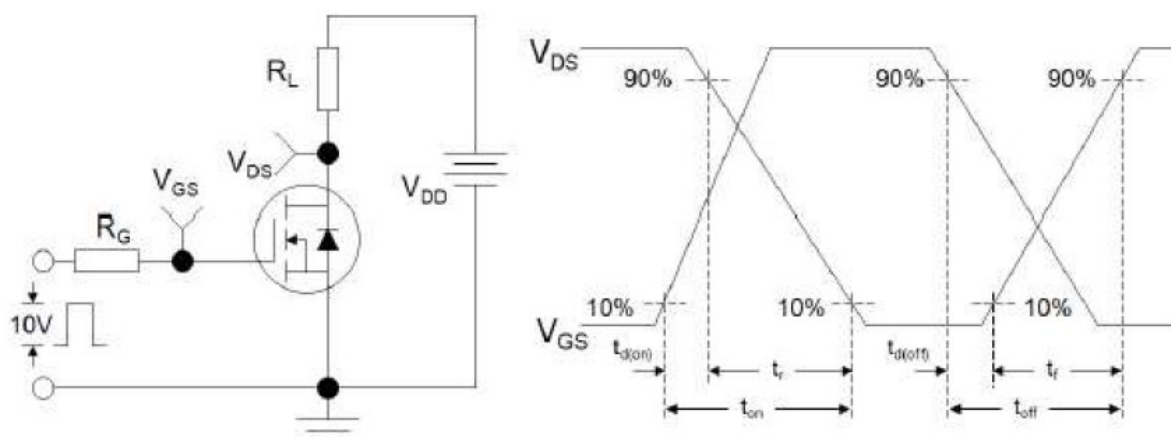
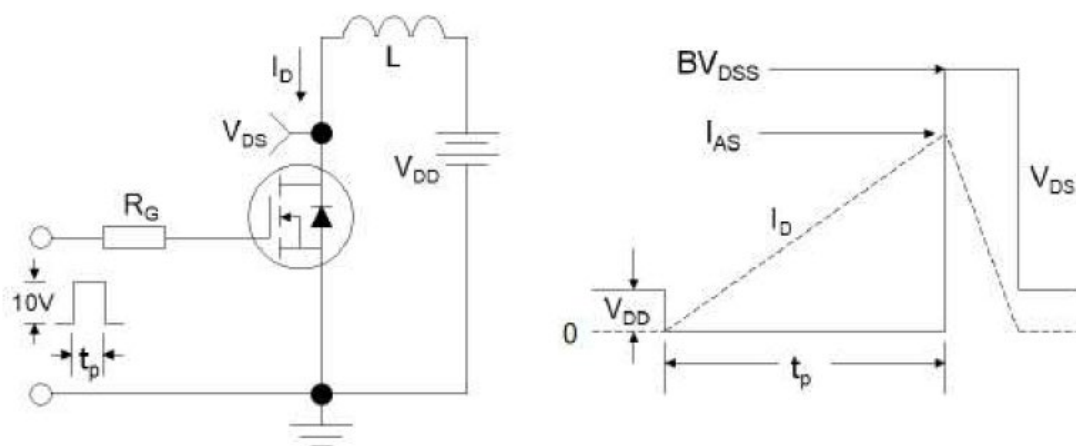
Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

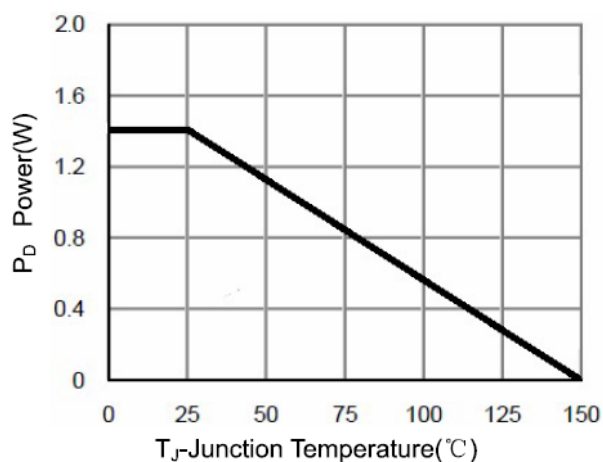
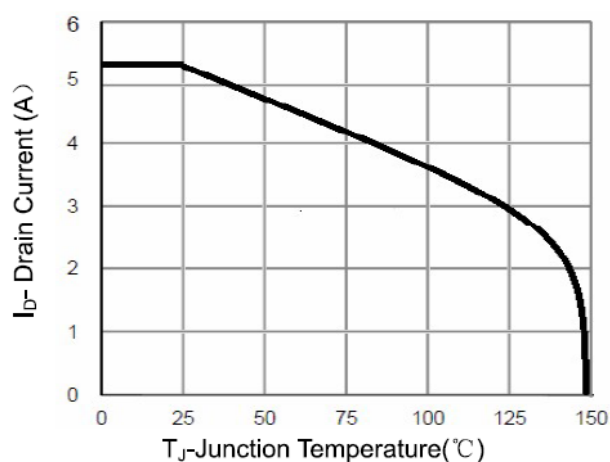
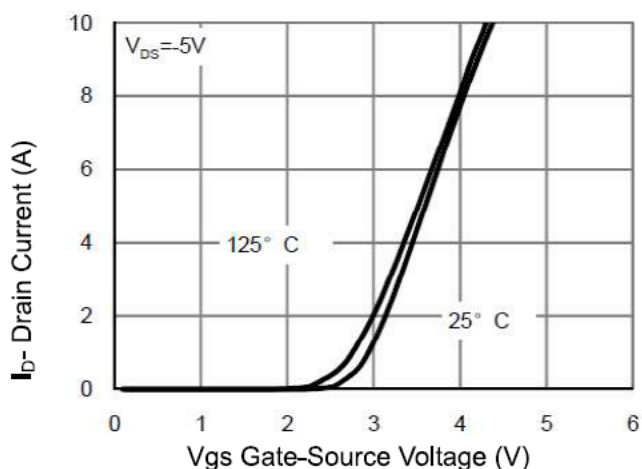
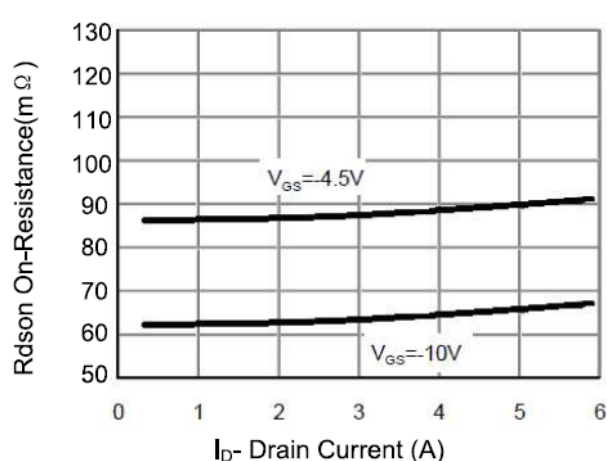
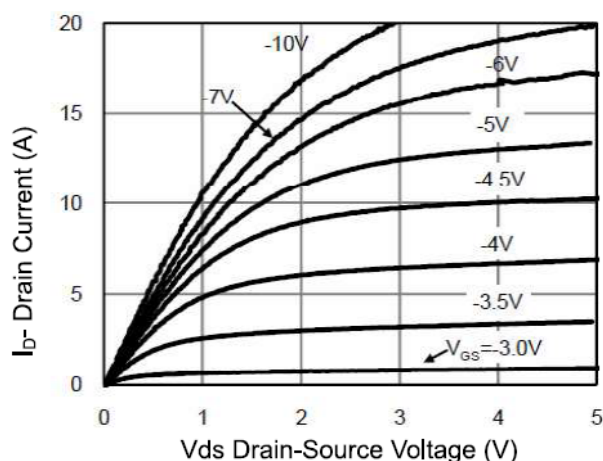
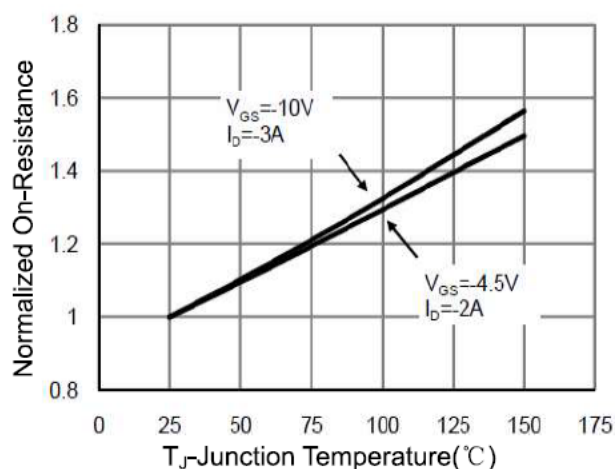
参数 Parameters	符号 Symbol	数值 Value	单位 Unit
Drain-Source Voltage	V _{DS}	-40	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (Ta =25°C)	I _D	-5	A
Continuous Drain Current (Ta =70°C)	I _D	-3.5	
Pulsed Drain Current	I _{DM}	-20	
Power Dissipation	P _D	2	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55-+150	°C
Thermal Resistance From Junction to Ambient	R _{θJA}	62.5	°C/W

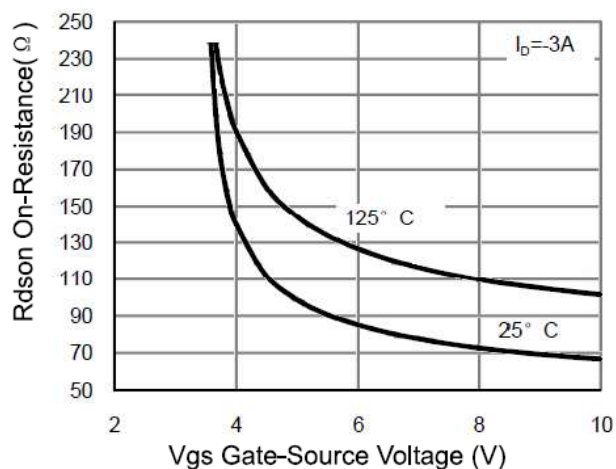
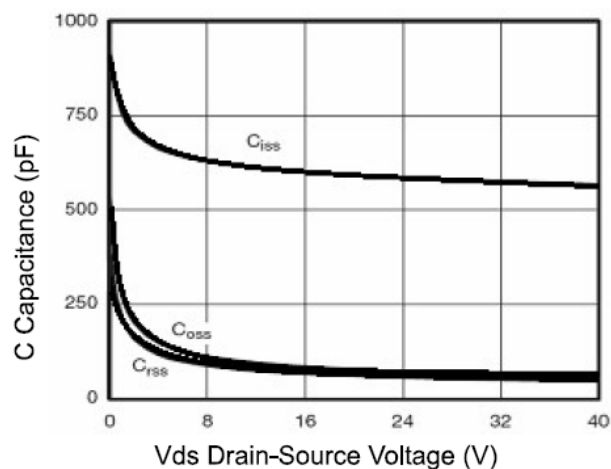
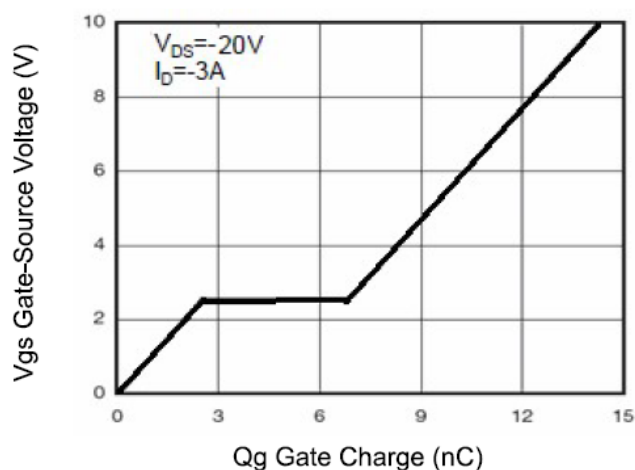
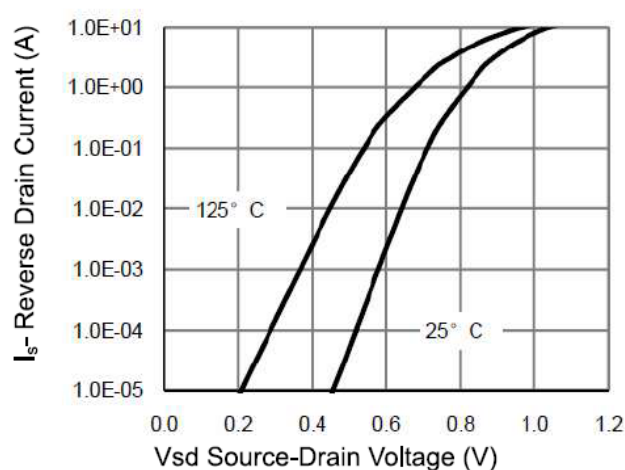
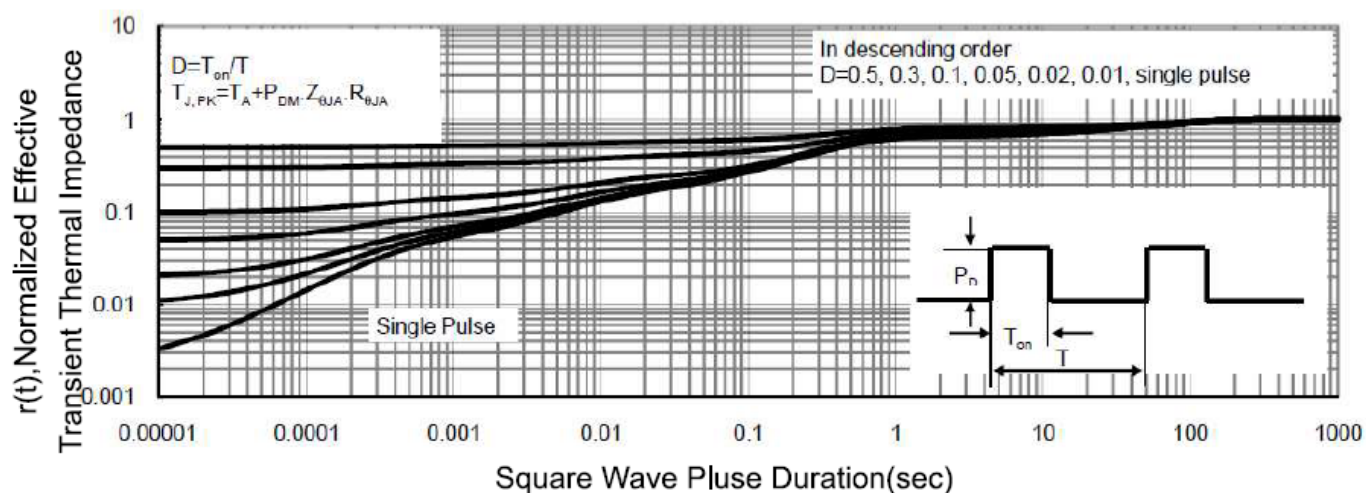
电特性 (TA = 25°C 除非另有规定)

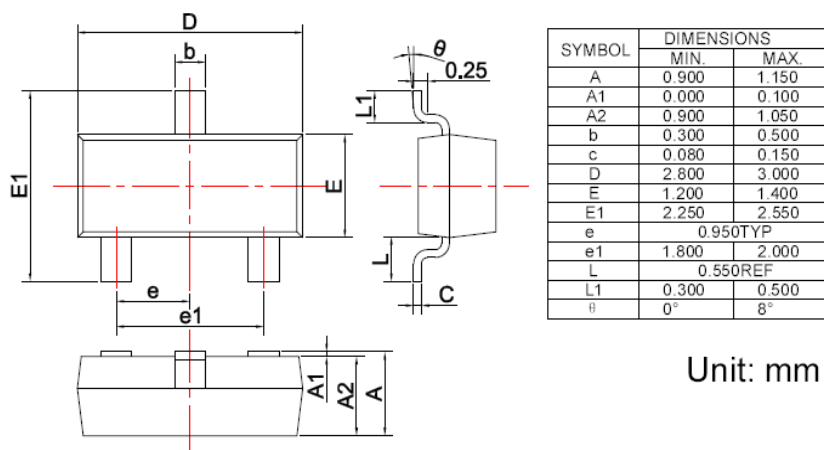
Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

参数 Parameter	符号 Symbols	测试条件 Test Condition	界限 Limits			单位 Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V, ID=-250uA	-40			V
Gate-Threshold voltage	V GS (th)	VDS=VGS, ID=-250uA	-1	-1.6	-2.5	V
Gate-body Leakage	IGSS	VDS=0V, VGS=±20V			±150	nA
Zero Gate Voltage Drain current	IDSS	VDS=-40V, VGS=0V			-1	uA
Drain-Source On-Resistance	RDS(ON)	VGS=-10V, ID=-3A		65	85	mΩ
		VGS=-4.5V, ID=-2A		90	120	
Dynamic						
Input capacitance	Ciss	VDS=-20V, VGS=0V,f=1MHz		596		pF
Output capacitance	Coss			90		
Reverse Transfer capacitance	Crss			70		
Switching characteristics						
Total gate charge	Qg	VDS=-20V, VGS=-10V,ID=-3A		14		nC
Gate-source charge	Qgs			2.9		
Gate-drain charge	Qgd			3.8		
Turn-on Time	td(on)	VDD=-20V, ID=-3A,, VGS=-10V, RG=3Ω,		9		ns
Rise time	tr			8		
Turn-off Time	td(off)			28		
Fall time	tf			10		
Drain-source body diode characteristics						
Diode Forward current	Is				-4	A
Diode Forward voltage	VSD	IS=-0.3A, VGS =0V			1.2	V

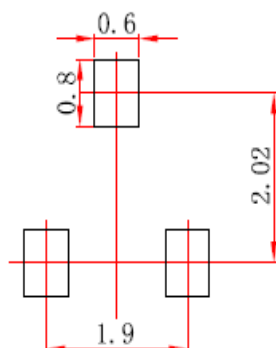
Test Circuit

Figure1:Gate Charge Test Circuit & Waveform

Figure 2: Resistive Switching Test Circuit & Waveforms

Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

Typical characteristics

Figure 1 Power Dissipation

Figure 2 Drain Current

Figure 5 Transfer Characteristics

Figure 6 Drain-Source On-Resistance


Figure 7 Rdson vs Vgs

Figure 8 Capacitance vs Vds

Figure 9 Gate Charge

Figure 10 Source- Drain Diode Forward

Figure 11 Normalized Maximum Transient Thermal Impedance

SOT-23 PACKAGE OUTLINE Plastic surface mounted package

焊盘设计参考Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs


Note:

1. Controlling dimension: In millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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