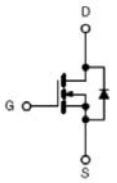
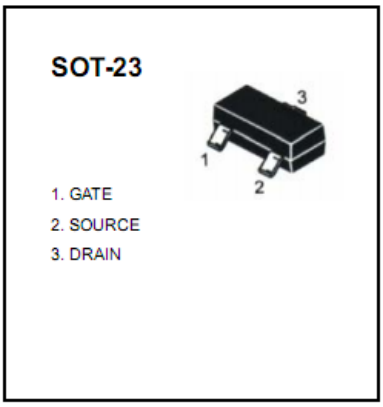
SOT-23 Plastic-Encapsulate Transistors

2300 MOSFET(N-Channel)

FEATURES
TrenchFET Power MOSFET





MARKING:C009T.

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	20	V
V_{GS}	Gate-Source voltage	±10	V
I_D	Drain current	5.8	A
P_D	Power Dissipation	1.25	W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	0.5	0.70	1.0	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
Drain-Source On-Resistance	$r_{DS(ON)}$	V_{GS}=2. 5V, I_D=4.0A		27	35	mΩ
		V_{GS}=4. 5V, I_D=5.0A		20	27	mΩ
Forward Trans conductance	gfs	V_{DS}=5V, I_D=5.8A		25		s
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1MHz		515		pF
Output Capacitance	Coss			90		
Reverse Transfer Capacitance	Crss			72		
Switching Capacitance						
Turn-on Delay Time	td(on)	V_{DD}=10V, R_L=1.7Ω, V_{GS}=10V R_{GEN}=3.0Ω		3		nS
Turn-on Rise Time	t_r			7.5		nS
Turn-off Delay Time	td(off)			20		nS
Turn-off Fall Time	t_f			6		nS
Total Gate Charge	Q_g	V_{DS}=10V, I_D=5. 8A, V_{GS}=10V,		12		nC
Gate-Source Charge	Q_{gs}			1		nC
Gate-Drain Charge	Q_{gd}			2		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A		0.75	1.2	V
Diode Forward Current	Is				2.0	A

Typical Characteristics 2300

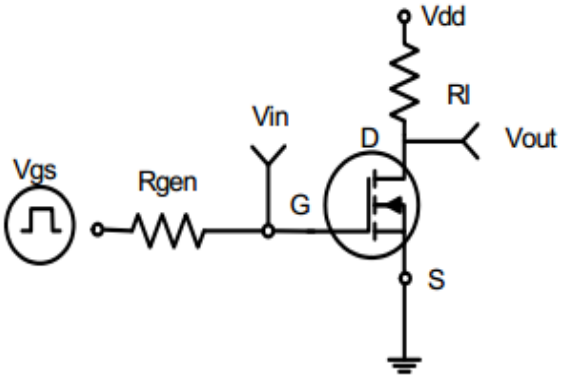


Figure 1:Switching Test Circuit

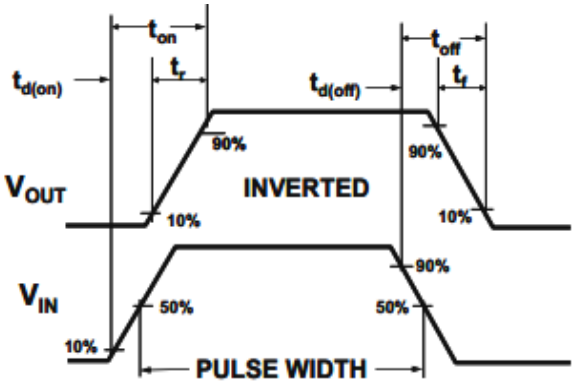


Figure 2:Switching Waveforms

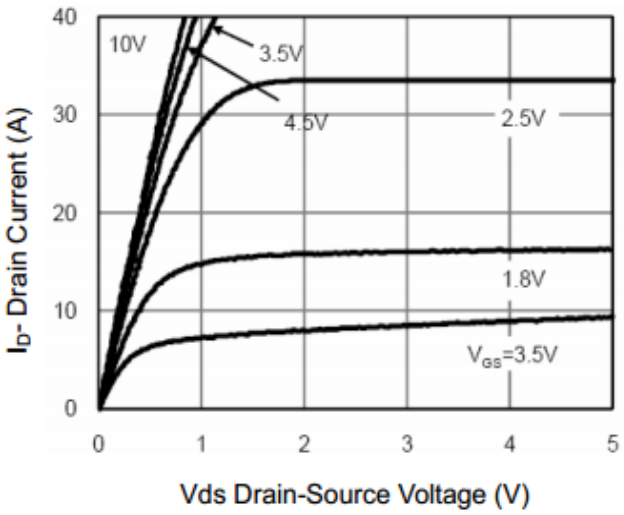


Figure 3 Output Characteristics

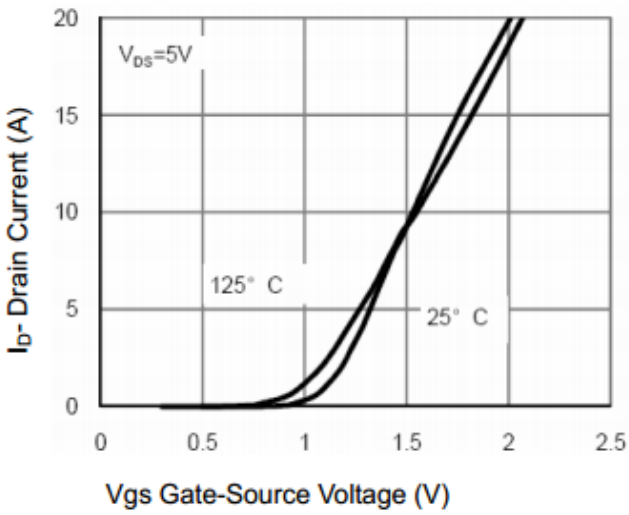


Figure 4 Transfer Characteristics

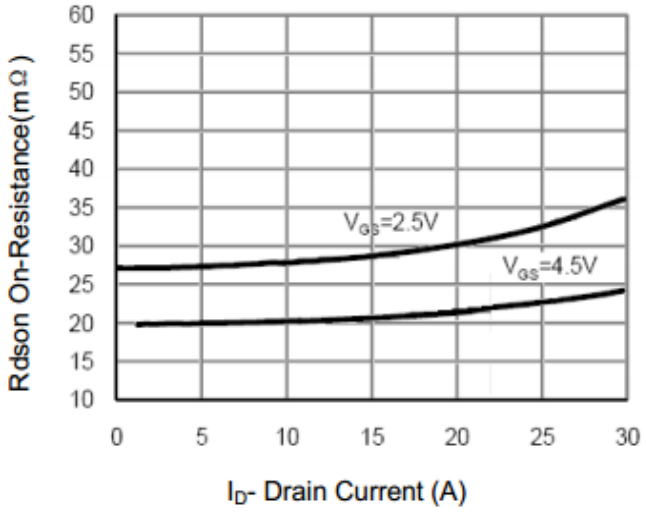


Figure 5 Drain-Source On-Resistance

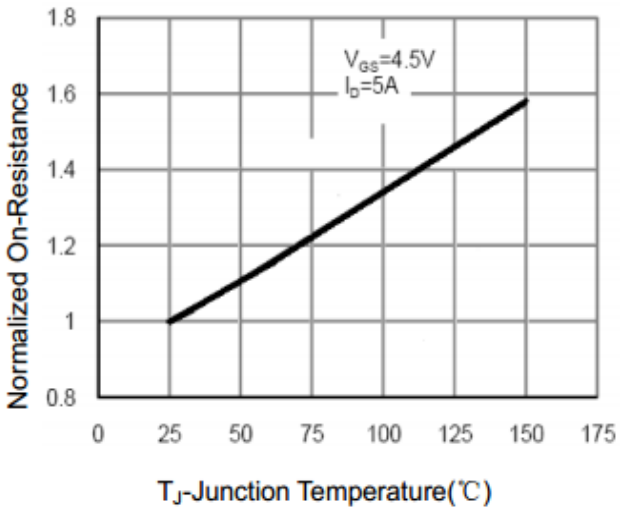


Figure 6 Drain-Source On-Resistance

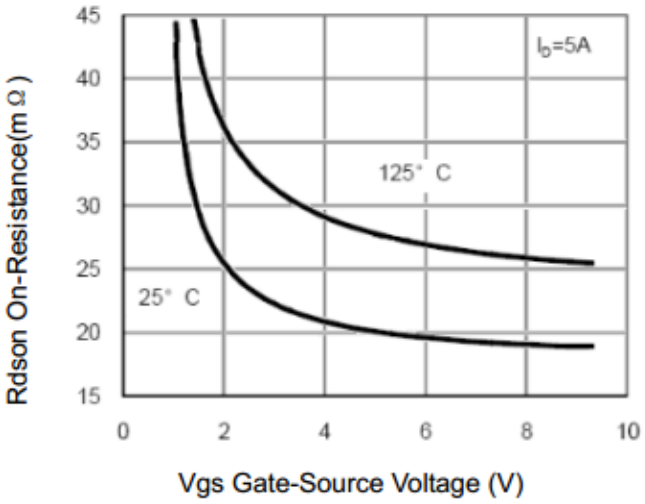


Figure7 Rdson vs Vgs

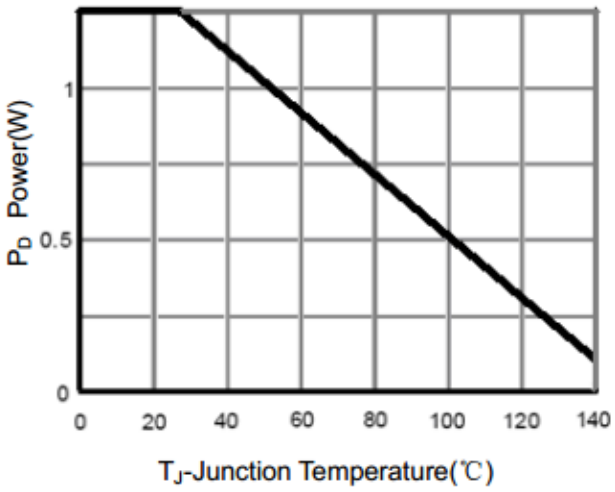


Figure 8 Power Dissipation

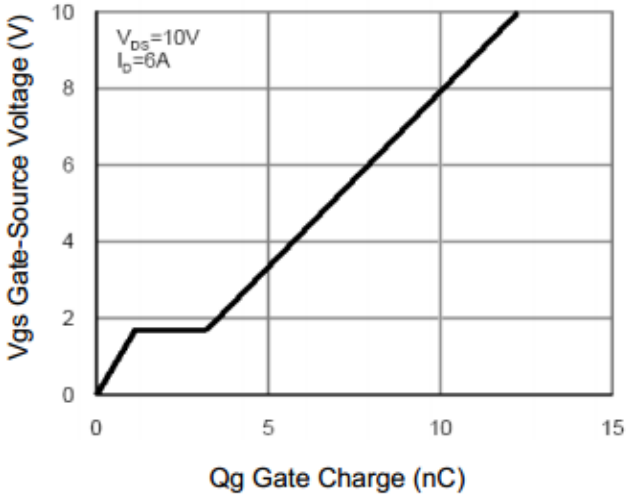


Figure 9 Gate Charge

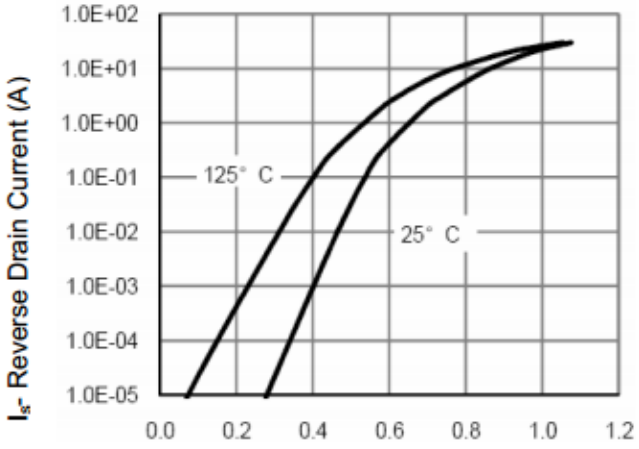


Figure 10 Source- Drain Diode Forward

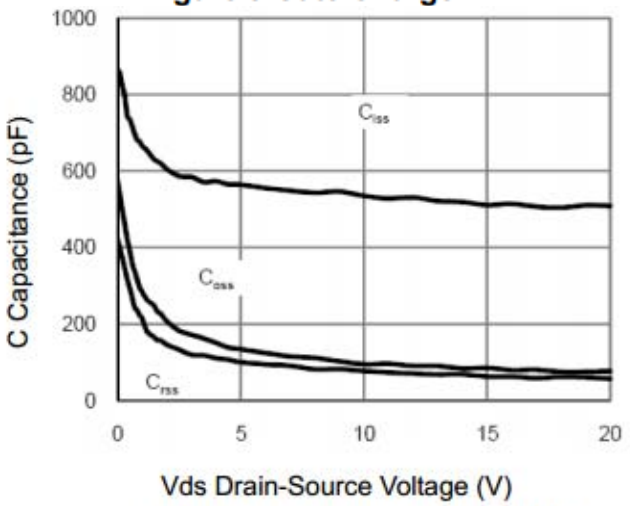


Figure 11 Capacitance vs Vds

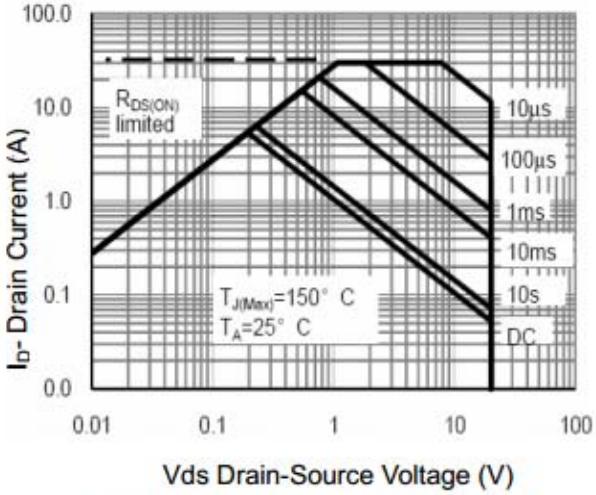


Figure 12 Safe Operation Area