

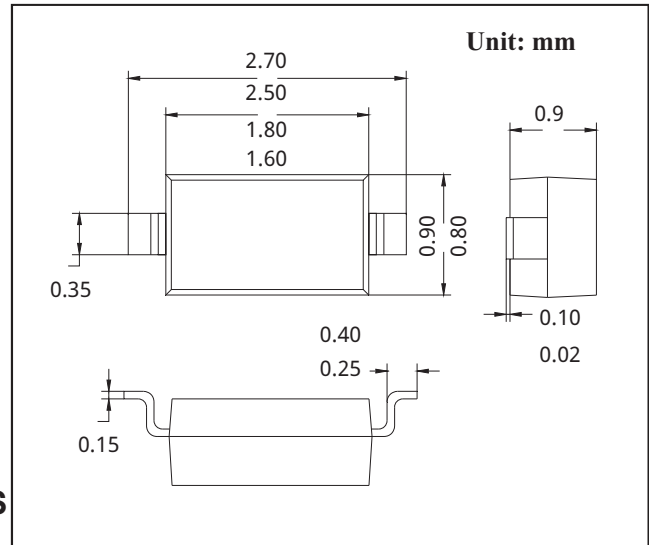
SOT-323 Plastic-Encapsulate MOSFETS

Features

- VDS (V) = 60V □ ID = 0.34 A (VGS = 10V) □
- RDS(ON) < 1.6 Ω (VGS = 10V) □
- RDS(ON) < 2.5 Ω (VGS = 4.5V) □
- ESD Protected □
- N-Channel MOSFET

MECHANICAL DATA

- Case style: SOT-323 molded plastic □
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	VDS	60	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current (Steady State)	ID	Ta=25°C	310
		Ta=85°C	220
Continuous Drain Current (t < 5 s)	ID	Ta=25°C	340
		Ta=85°C	240
Pulsed Drain Current (tp = 10 us)	IDM	1.4	A
Gate-Source ESD Rating	ESD	900	V
Power Dissipation	PD	Steady State	280
		t < 5 s	330
Thermal Resistance.Junction- to-Ambient	RthJA	450	°C/W
Thermal Resistance.Junction- to-Case	RthJC	375	
Lead Temperature for Soldering Purposes	TL	260	°C
Junction Temperature	TJ	150	
Storage Temperature Range	Tstg	-55 to 150	

Mosfet Electrical Characteristics TA=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	VDSS	ID=250 μA, VGS=0V	60			V	
Zero Gate Voltage Drain Current	IDSS	VDS=60V, VGS=0V, TJ=25°C			1	μA	
		VDS=60V, VGS=0V, TJ=125°C			500		
		VDS=50V, VGS=0V, TJ=25°C			0.1		
Gate-Body Leakage Current	IGSS	VDS=0V, VGS=±20V			±10	μA	
		VDS=0V, VGS=±10V			±450		
		VDS=0V, VGS=±5V			±150		
Gate Threshold Voltage (Note.1)	VGS(th)	VDS=VGS, ID=250 μA	1			V	
Static Drain-Source On-Resistance (Note.1)	RDS(On)	VGS=10V, ID=500mA		1.19	1.6	Ω	
		VGS=4.5V, ID=200mA		1.33	2.5		
On State Drain Current	ID(ON)	VGS=4.5V, VDS=5V	30			A	
Forward Transconductance (Note.1)	gFS	VDS=5V, ID=200mA		80		mS	
Input Capacitance	Ciss	VGS=0V, VDS=20V, f=1MHz		24.5		pF	
Output Capacitance	Coss			4.2			
Reverse Transfer Capacitance	Crss			2.2			
Total Gate Charge	Qg			0.7			
Threshold Gate Charge	QgT		VGS=4.5V, VDS=10V, ID=200mA		0.1		
Gate Source Charge	Qgs				0.3		
Gate Drain Charge	Qgd				0.1		
Turn-On DelayTime	td(on)				12.2		
Turn-On Rise Time	tr	VGS=10V, VDS=25V, ID=500mA, RG=25 Ω □ (Note.2)		9		ns	
Turn-Off DelayTime	td(off)			55.8			
Turn-Off Fall Time	tf			29			
Maximum Body-Diode Continuous Current	IS				0.25	A	
Diode Forward Voltage	VSD	IS=0.2A, VGS=0V, TJ = 25°C		0.8	1.2	V	
		IS=0.2A, VGS=0V, TJ = 85°C		0.7			

Note.1:Pulse Test: pulse width ≤ 300us, duty cycle ≤ 2%

Note.2:Switching characteristics are independent of operating junction temperatures

RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

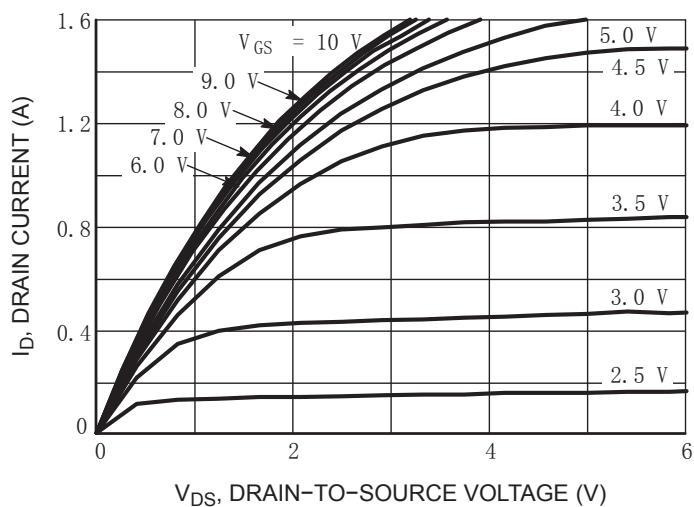


Figure 1. On-Region Characteristics

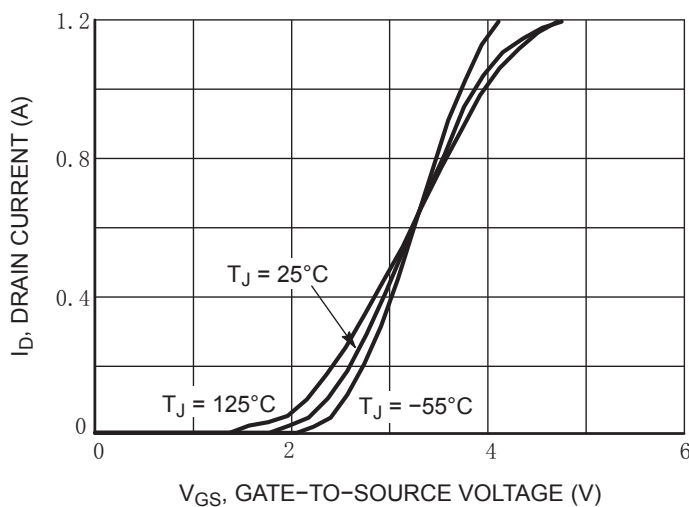


Figure 2. Transfer Characteristics

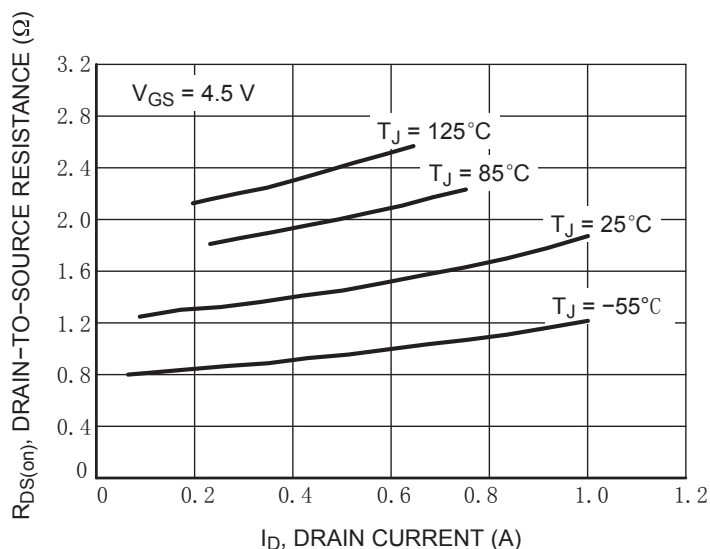


Figure 3. On-Resistance vs. Drain Current and Temperature

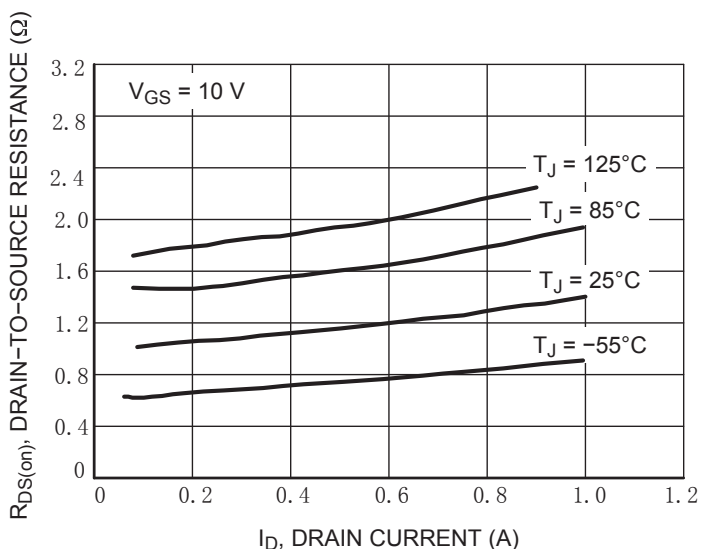


Figure 4. On-Resistance vs. Drain Current and Temperature

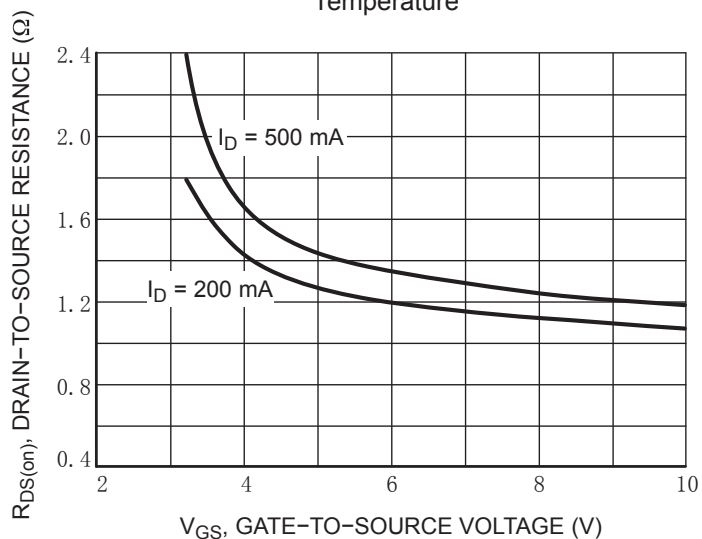


Figure 5. On-Resistance vs. Gate-to-Source Voltage

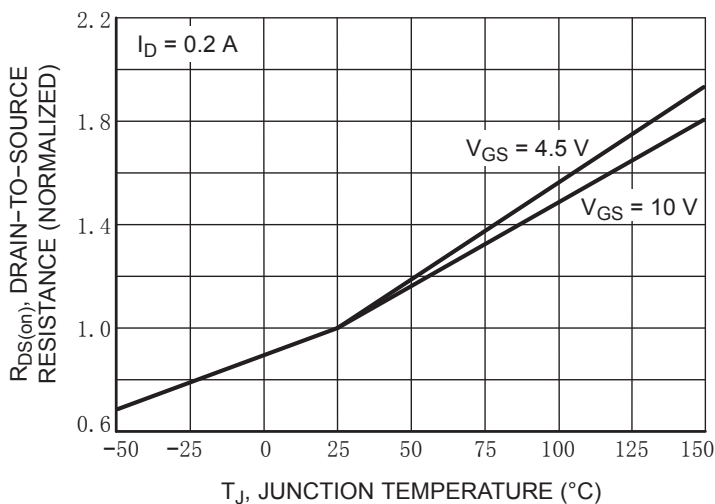


Figure 6. On-Resistance Variation with Temperature

RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

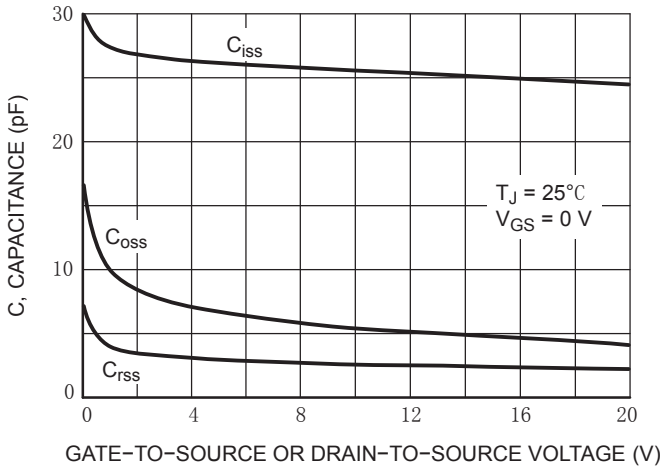


Figure 7. Capacitance Variation

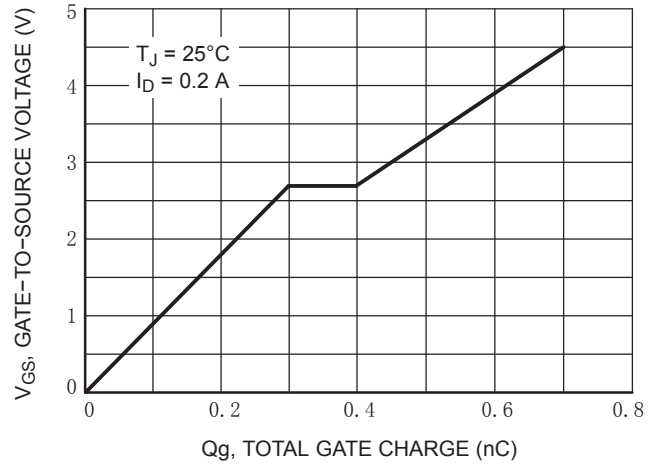


Figure 8. Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

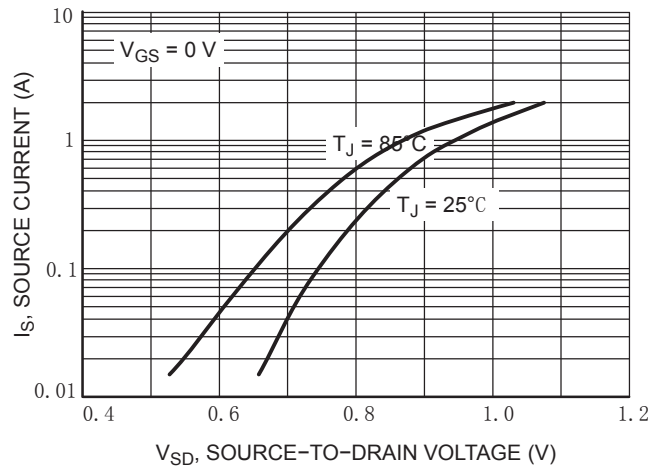


Figure 9. Diode Forward Voltage vs. Current