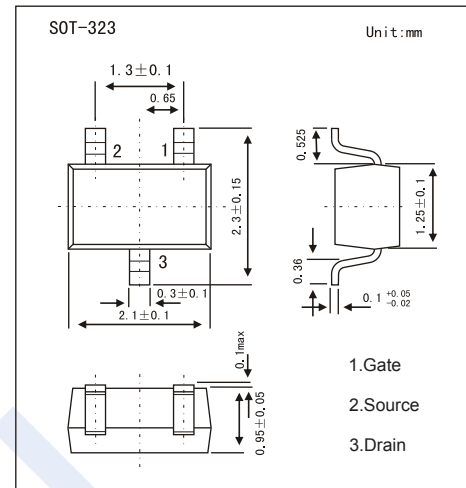
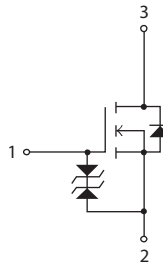


N-Channel MOSFET

2KK5781

■ Features

- $V_{DS} (V) = 25 V$
- $I_D = 0.75 A$
- $R_{DS(ON)} < 350m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 400m\Omega (V_{GS} = 2.7V)$
- ESD Protection

■ Absolute Maximum Ratings ($T_J = 25^\circ C$ unless otherwise noted)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	25	V
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	0.75	A
	$T_A = 70^\circ C$		0.6	
Pulsed Drain Current ($t_p=10\mu s$)		I_{DM}	3	
Power Dissipation (Note 1)		P_D	0.28	W
Thermal Resistance.Junction- to-Ambient (Note 1)		$R_{\theta JA}$	450	$^\circ C/W$
Source Current (Body Diode) (Note 1)		I_S	0.3	A
ESD Rating – Machine Model		V_{ESD}	250	V
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

Note 1. Surface mounted on FR4 board using 1 in sq pad size. (Cu area = 1.127 in sq [1 oz] including traces).

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■ Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	25			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			0.5	μA
		V _{DS} =20V, V _{GS} =0V, T _J = 70°C			2	
		V _{DS} =20V, V _{GS} =0V, T _J = 125°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±3	
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250μA	0.65		1.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.6A			350	mΩ
		V _{GS} =2.7V, I _D =0.2A			400	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =0.5A		0.5		S
CHARGES AND CAPACITANCES						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1MHz		49	60	pF
Output Capacitance	C _{oss}			22.4		
Reverse Transfer Capacitance	C _{rss}			8		
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =0.8A		1.2	1.5	nC
Gate Source Charge	Q _{gs}			0.28		
Gate Drain Charge	Q _{gd}			0.3		
SWITCHING CHARACTERISTICS (Note 3)						
Turn-On Delay Time	t _{d(on)}	V _{GS} = 4.5 V, V _{DS} = 15 V, I _D = 0.7 A, R _G = 51 Ω		5		ns
Turn-On Rise Time	t _r			8.2		
Turn-Off Delay Time	t _{d(off)}			23		
Turn-Off Fall Time	t _f			41		
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V _{SD}	I _S =0.6A, V _{GS} =0V		0.82	1.2	V

Notes:

- Pulse Test: pulse width ≤ 300μs, duty cycle ≤ 2%.
- Switching characteristics are independent of operating junction temperatures.

■ Marking

Marking	KDC
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■ Typical Characteristics

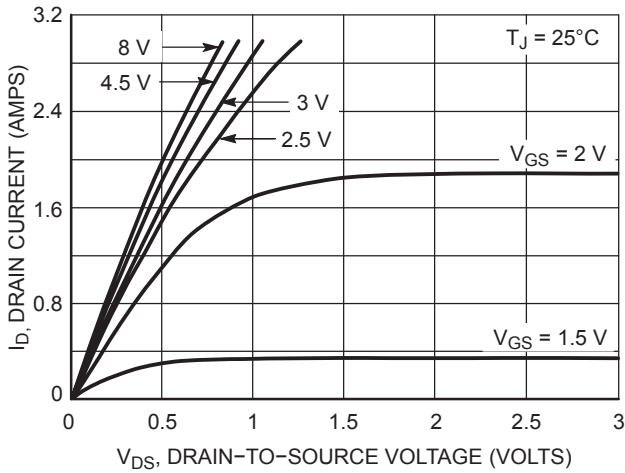


Figure 1. On-Region Characteristics

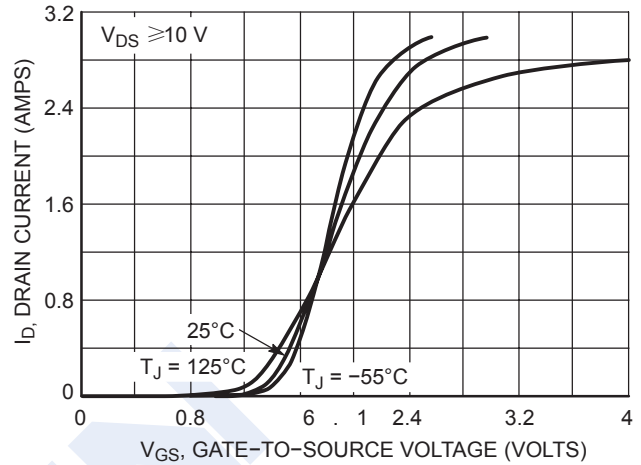


Figure 2. Transfer Characteristics

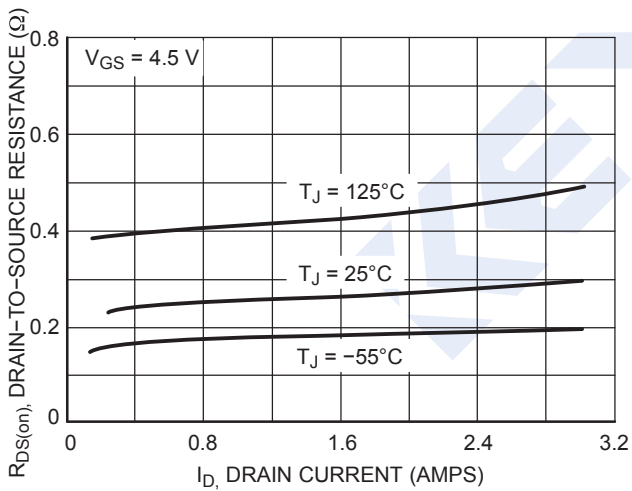


Figure 3. On-Resistance vs. Drain Current and Temperature

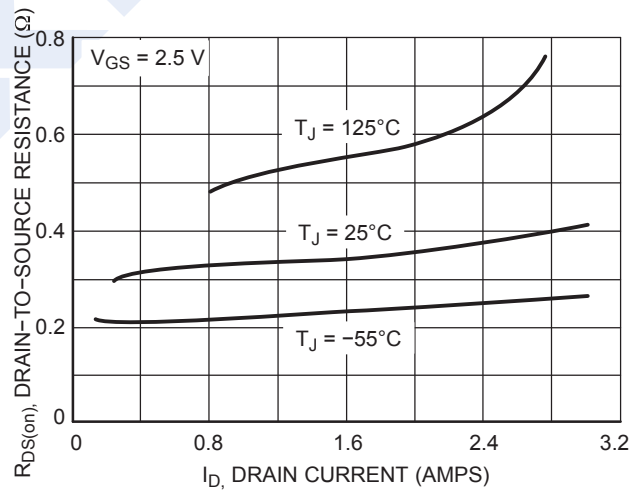


Figure 4. On-Resistance vs. Drain Current and Gate Voltage

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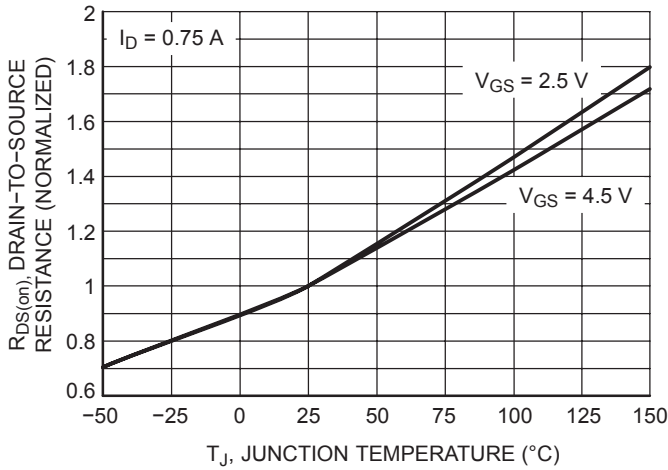


Figure 5. On-Resistance Variation with Temperature

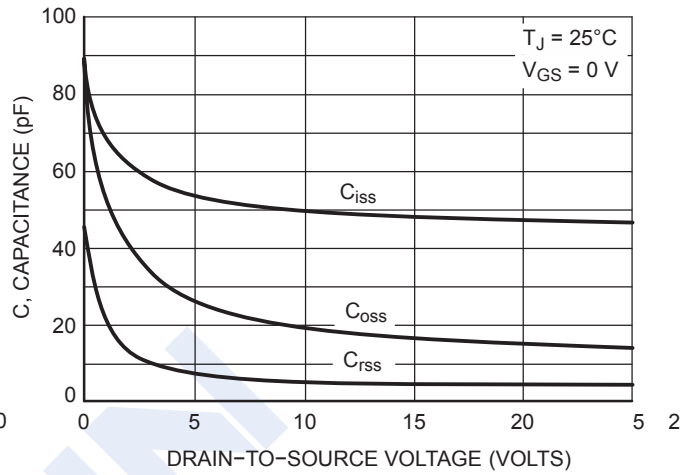


Figure 6. Capacitance Variation

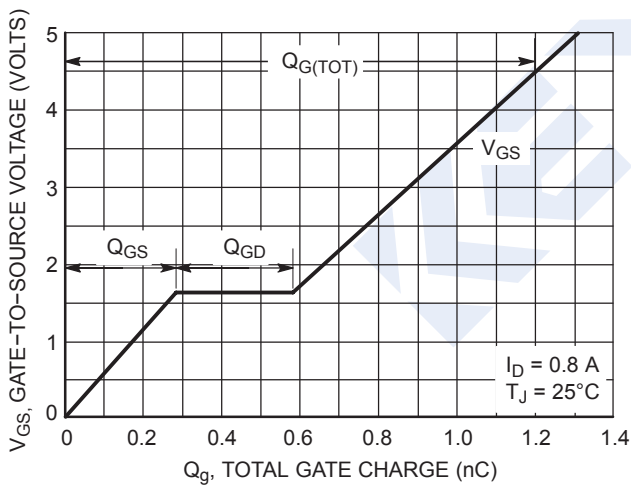


Figure 7. Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

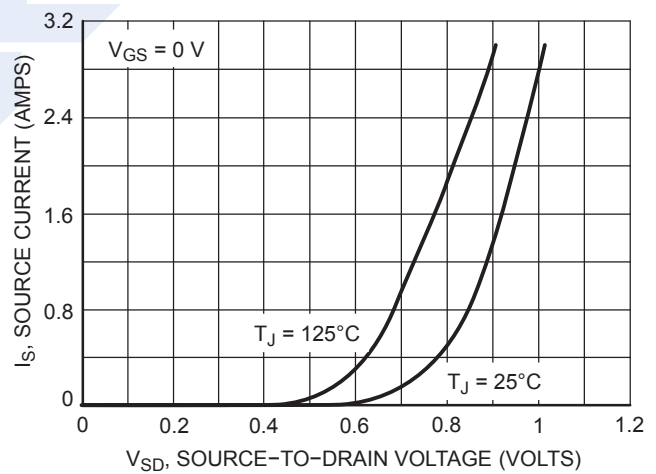


Figure 8. Diode Forward Voltage vs. Current