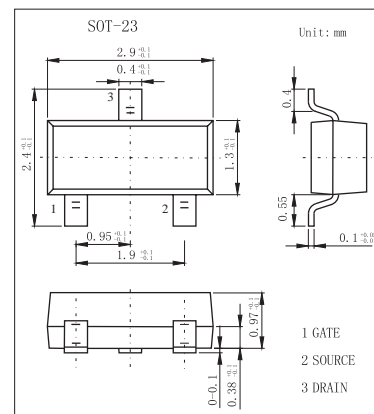
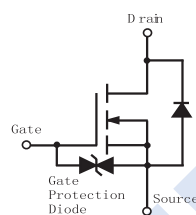


N-Channel MOSFET

2KK5065

■ Features

- $BV_{DSS} = 20\text{ V}$
- $I_D = 1.6\text{ A}$
- $R_{DS(ON)} = 88\text{ m}\Omega(\text{Typ.}) @ V_{GS} = 4.5\text{ V}$
- $R_{DS(ON)} = 110\text{ m}\Omega(\text{Typ.}) @ V_{GS} = 2.5\text{ V}$
- ESD Protection



■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current (Note 1)	I_D	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current (Note 2)	I_{DM}	6.4	
Power Dissipation	P_D	0.35	W
Thermal Resistance, Junction- to-Ambient (Note 3)	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. Calculated continuous current based on maximum allowable junction temperature.
2. Pulse width limited by safe operating area.
3. Surface mounted on a 1 inch² FR-4 board with 2OZ copper.

2KK5065

■ Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\ \mu\text{A}$, $V_{GS} = 0\text{V}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 125^\circ\text{C}$			10	
Gate to Source Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 10\text{V}$			± 10	μA
Gate to Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	0.5		0.9	V
Static Drain-Source On-Resistance *	$R_{DS(on)}$	$V_{GS} = 4.5\text{V}$, $I_D = 1.6\text{A}$		88	110	m Ω
		$V_{GS} = 2.5\text{V}$, $I_D = 1\text{A}$		110	138	
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 10\text{V}$, $f = 1\text{MHz}$		64		pF
Output Capacitance	C_{oss}			17		
Reverse Transfer Capacitance	C_{rss}			20		
Total Gate Charge	Q_g	$V_{GS} = 4.5\text{V}$, $V_{DS} = 15\text{V}$, $I_D = 1\text{A}$		1.3		nC
Gate Source Charge	Q_{gs}			0.5		
Gate Drain Charge	Q_{gd}			0.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GEN} = 4.5\text{V}$, $V_{DD} = 10\text{V}$, $I_D = 1\text{A}$, $R_G = 1\ \Omega$		2.6		ns
Turn-On Rise Time	t_r			16		
Turn-Off Delay Time	$t_{d(off)}$			29.8		
Turn-Off Fall Time	t_f			11		
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{V}$, $I_S = 1\text{A}$			1	V
Reverse Recovery Time	t_{rr}	$I_{SD} = 1\text{A}$, $di_{SD}/dt = 100\text{A}/\mu\text{s}$		4.9		ns
Reverse Recovery Charge	Q_{rr}			1		nC

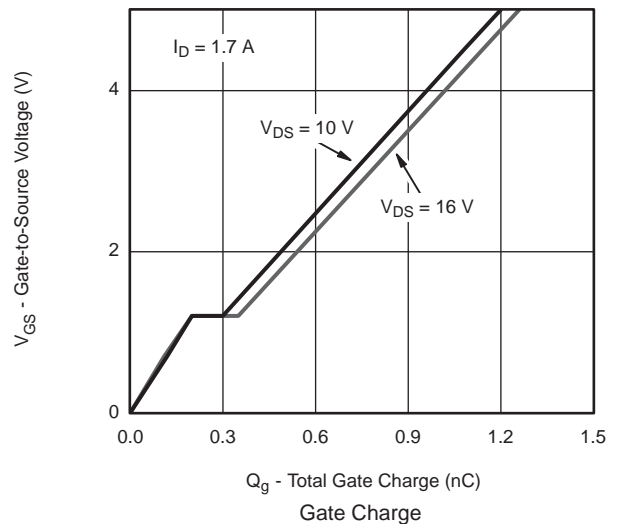
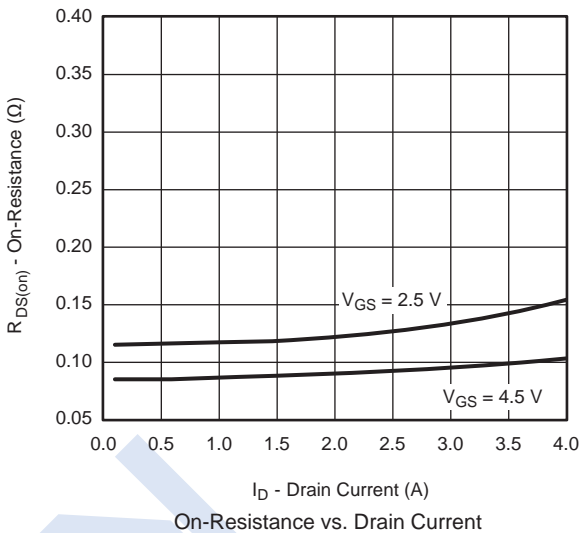
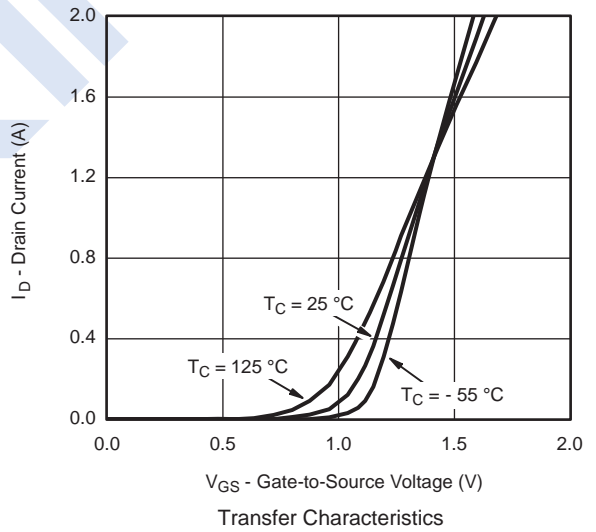
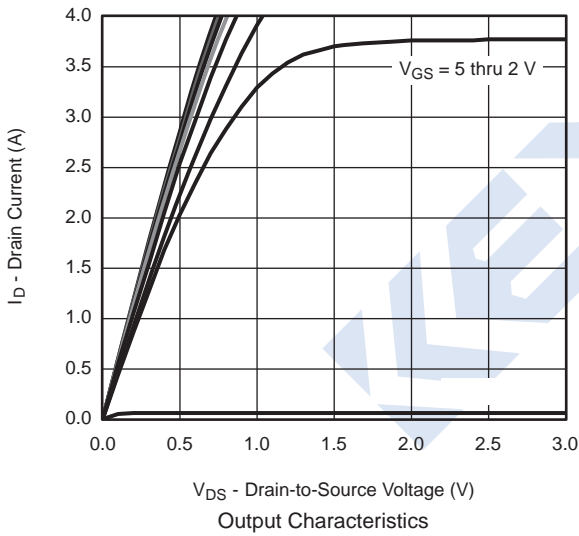
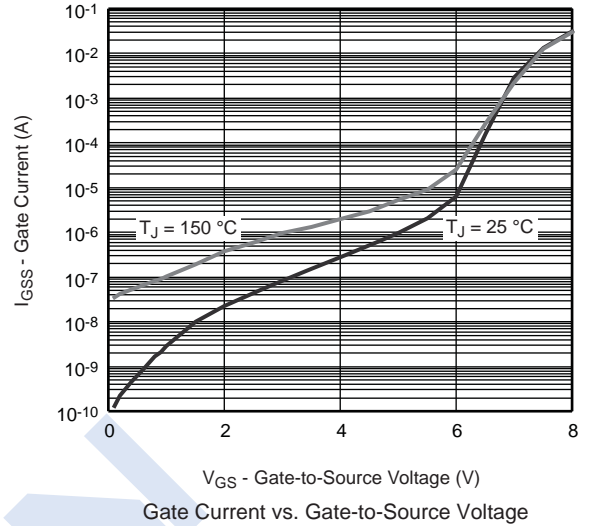
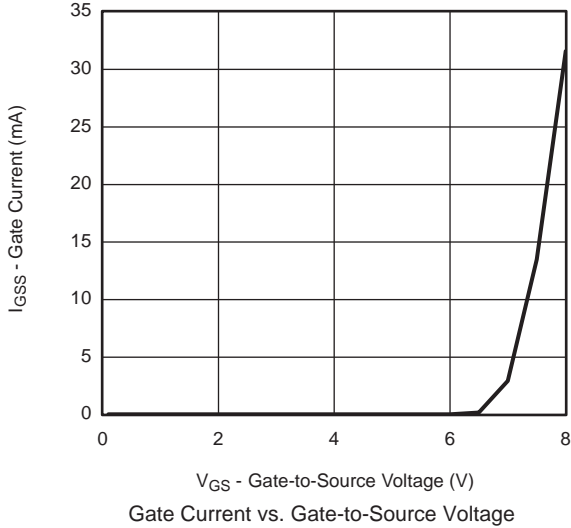
* : Pulse test; Pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

■ Marking

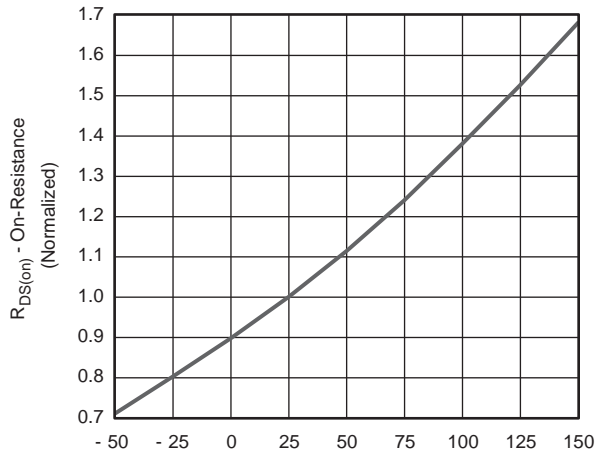
Marking	KBQ
---------	-----

2KK5065

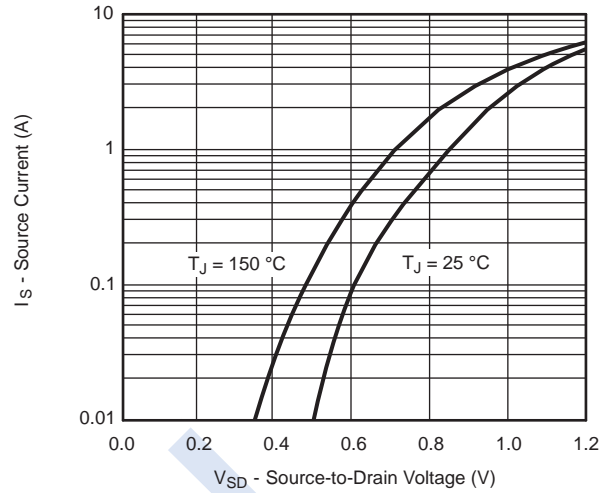
Typical Characteristics



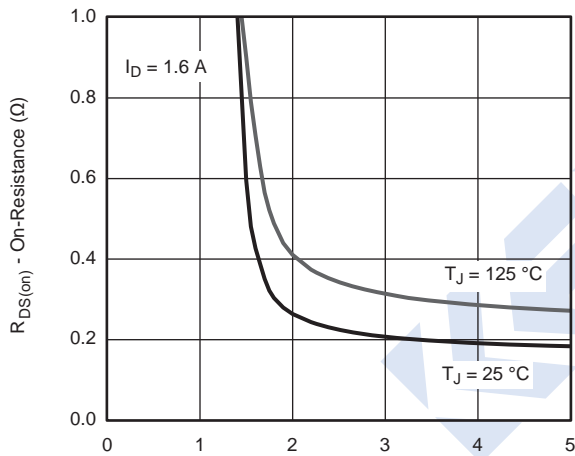
2KK5065



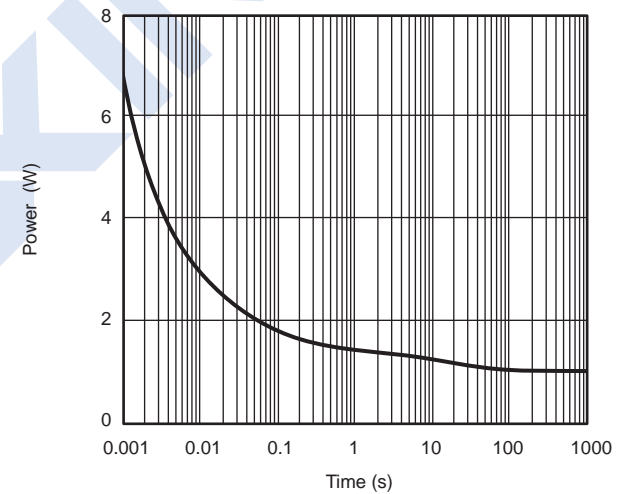
Normalized On-Resistance vs. Junction Temperature



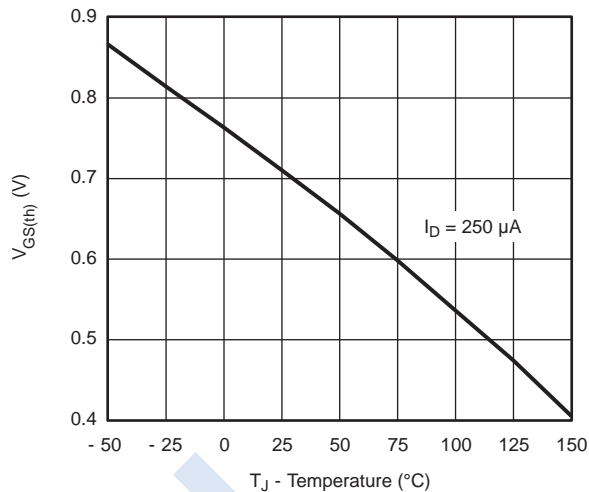
Source-Drain Diode Forward Voltage



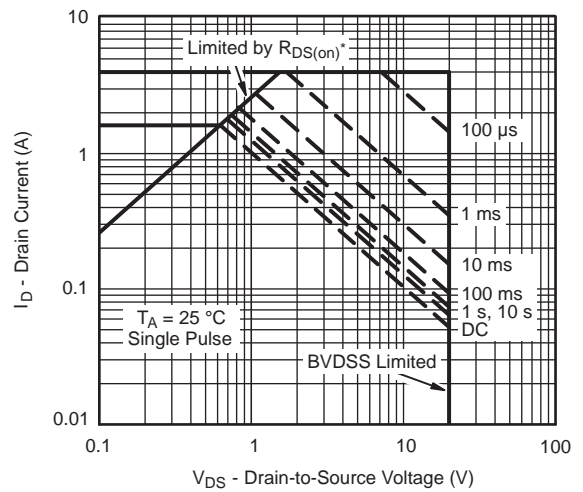
On-Resistance vs. Gate-to-Source Voltage



Single Pulse Power, Junction-to-Ambient



Threshold Voltage



* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified
Safe Operating Area, Junction-to-Ambient