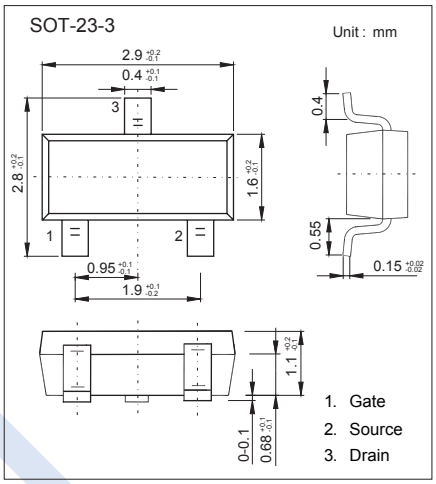
Depletion-Mode Power MOSFET

2KK5066



■ Features

- BV_{DSX} = 150 V
- I_{DSS} = 200 mA
- $R_{DS(ON)}$ < 15 Ω
- High-threshold voltage, its typical value as high as -6V
- ESD improved Capability
- Depletion Mode (Normally On)
- Proprietary Advanced Planar Technology
- Rugged Polysilicon Gate Cell Structure
- Fast Switching Speed

■ Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSX}	150	V
Drain-Gate Voltage	V_{DGX}	150	
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	0.2	A
Pulsed Drain Current (Note 1)	I_{DM}	0.6	
Power Dissipation	P_D	0.5	W
Thermal Resistance. Junction- to-Ambient	$R_{\theta JA}$	250	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

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■ Electrical Characteristics (T_A = 25℃ unless othewise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV_{DSX}	I_D = 250 μA, V_{GS} = -15V	150			V
Drain-to-Source Leakage Current	$I_{D(OFF)}$	V_{DS} = 150 V, V_{GS} = -15 V			10	μA
		V_{DS} = 150 V, V_{GS} = -15 V, T_J = 125℃			1	mA
Gate to Source Leakage Current	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±20	μA
ON Characteristics						
Saturated Drain-to-Source Current	I_{DSS}	V_{DS} = 25 V, V_{GS} = 0 V	200			mA
Gate-to-Source Cut-off Voltage	$V_{GS(OFF)}$	V_{DS} = 3V , I_D = 8 μA	-7		-5	V
Static Drain-Source On-Resistance *	$R_{DS(ON)}$	V_{GS} = 0 V, I_D =200 mA		10	15	Ω
Forward Transconductance	g_{FS}	V_{DS} = 10 V, I_D = 100 mA		0.24		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 10 V, V_{DS} = 25 V, f = 1 MHz		12.8		pF
Output Capacitance	C_{oss}			5.4		
Reverse Transfer Capacitance	C_{rss}			3.3		
Total Gate Charge	Q_g	V_{GS} = -10V~0V, V_{DS} = 75 V, I_D = 200 mA		3		nC
Gate Source Charge	Q_{gs}			0.23		
Gate Drain Charge	Q_{gd}			1.1		
Resistive Switching Characteristics						
Turn-On DelayTime	$t_{d(on)}$	V_{DD}=75V,I_D=200mA, R_G=20Ω, V_{GS} = -10V~0V,		7		ns
Turn-On Rise Time	t_r			16		
Turn-Off DelayTime	$t_{d(off)}$			25		
Turn-Off Fall Time	t_f			120		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD}=200mA,V_{GS}=-15V			1.2	V

* : Pulse width≤380μs; duty cycle≤2%.

■ Marking

Marking	KBR

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■ Typical Electrical Characteristics

Figure 1. Maximum Power Dissipation vs. Case Temperature

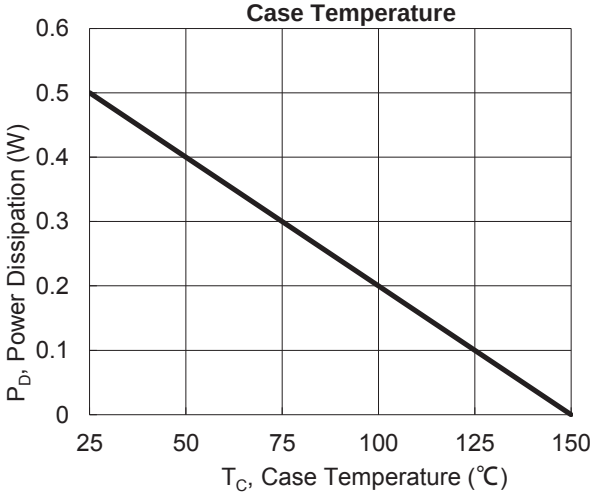

Figure 2. Maximum Continuous Drain Current vs Case Temperature

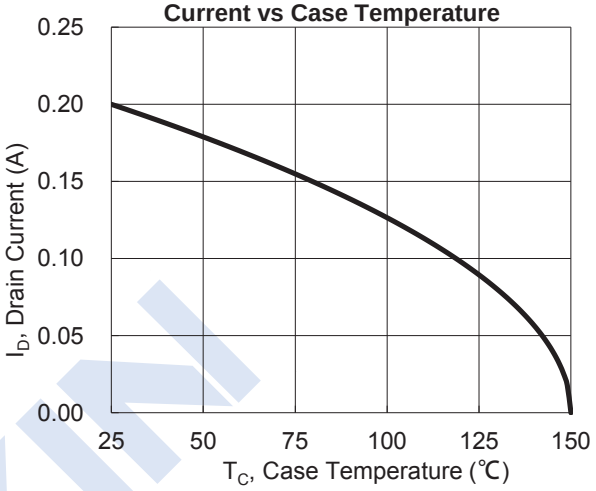

Figure 3. Typical Output Characteristics

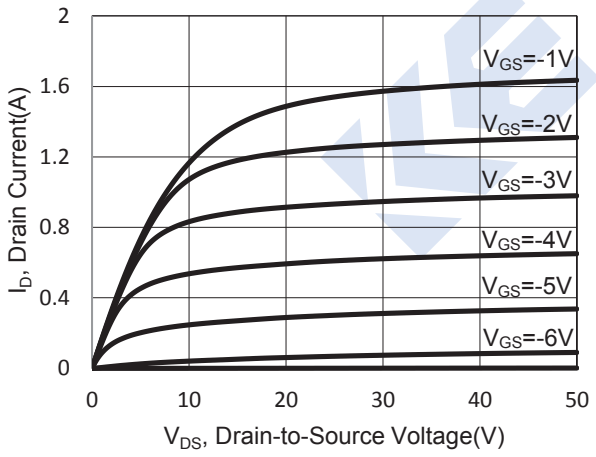

Figure 4. Typical Transfer Characteristics