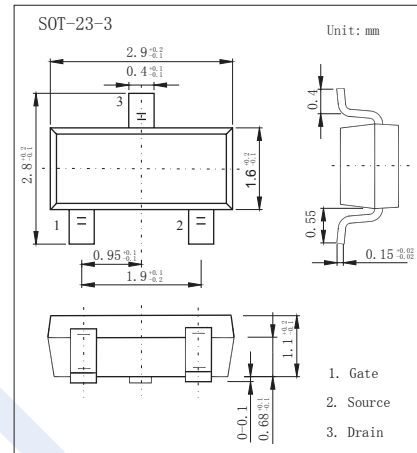
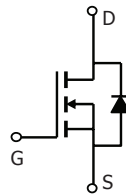


## N-Channel MOSFET

## 2SK3046DS

## ■ Features

- 100V/1A,  $R_{DS(ON)} = 310\text{m}\Omega @ V_{GS} = 10\text{V}$
- High density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

■ Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ )	$I_D$	$T_A = 25^\circ\text{C}$	3
		$T_A = 70^\circ\text{C}$	2
Pulsed Drain Current	$I_{DM}$	10	A
Power Dissipation	$P_D$	$T_A = 25^\circ\text{C}$	1.25
		$T_A = 70^\circ\text{C}$	0.8
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{thJA}$	100	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## N-Channel MOSFET

## 2SK3046DS

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D = 250 \mu\text{A}$ , $V_{GS} = 0\text{V}$	100			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80\text{V}$ , $V_{GS} = 0\text{V}$			1	$\mu\text{A}$
		$V_{DS} = 80\text{V}$ , $V_{GS} = 0\text{V}$ , $T_J = 125^\circ\text{C}$			5	
Gate to Source Leakage Current	$I_{GSS}$	$V_{DS} = 0\text{V}$ , $V_{GS} = \pm 20\text{V}$			$\pm 100$	nA
Gate to Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 250\mu\text{A}$	1		2.5	V
On-State Drain Current	$I_{D(on)}$	$V_{DS} \geq 5\text{V}$ , $V_{GS} = 10\text{V}$	3			A
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}$ , $I_D = 3\text{A}$			0.31	$\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 10\text{V}$ , $I_D = 3\text{A}$		2.4		S
Input Capacitance	$C_{iss}$	$V_{DS} = 25\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$		508		pF
Output Capacitance	$C_{oss}$			29		
Reverse Transfer Capacitance	$C_{rss}$			16.5		
Turn-On DelayTime	$t_{d(on)}$	$V_{DD} = 50\text{V}$ , $R_L = 10\Omega$ $I_D = 3\text{A}$ , $V_{GEN} = 10\text{V}$ $R_G = 3.3\Omega$		2		ns
Turn-On Rise Time	$t_r$			21.5		
Turn-Off DelayTime	$t_{d(off)}$			11.2		
Turn-Off Fall Time	$t_f$			18.8		
Total Gate Charge	$Q_g$	$V_{DS} = 80\text{V}$ , $V_{GS} = 10\text{V}$ , $I_D = 5\text{A}$		9	13	nC
Gate Source Charge	$Q_{gs}$			2		
Gate Drain Charge	$Q_{gd}$			1.4		
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0\text{V}$ , $I_S = 1\text{A}$			1.2	V

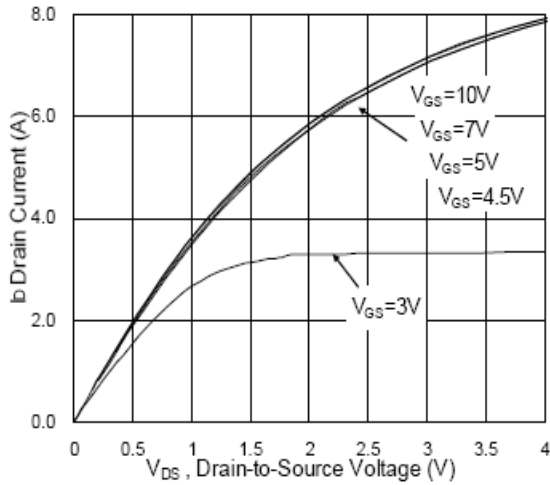
## ■ Marking

Marking	K100
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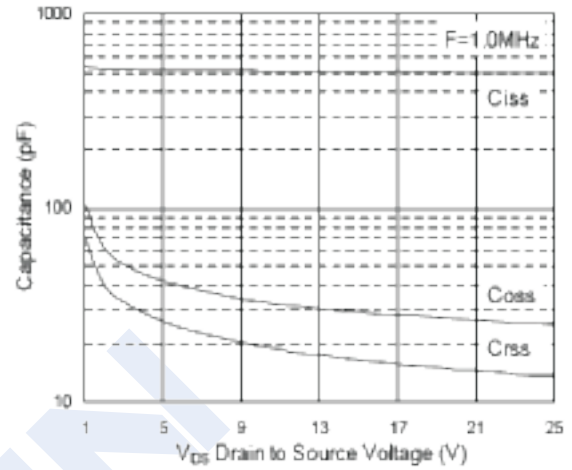
### N-Channel MOSFET

### 2SK3046DS

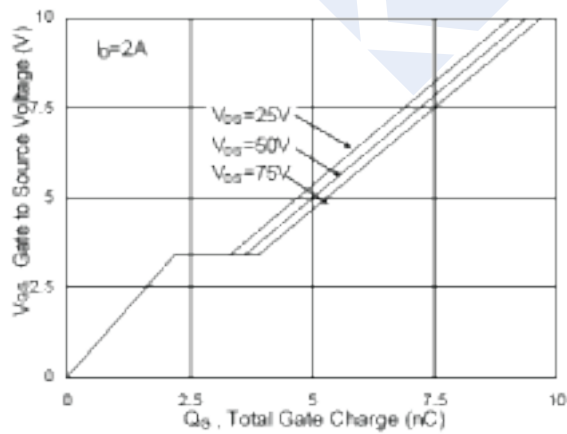
■ Typical Characteristics



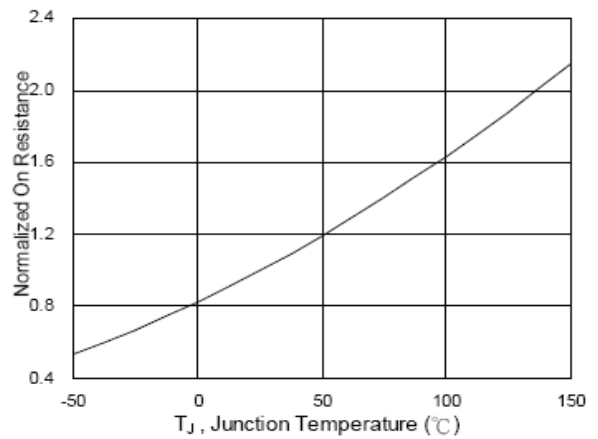
Output Characteristics



Capacitance



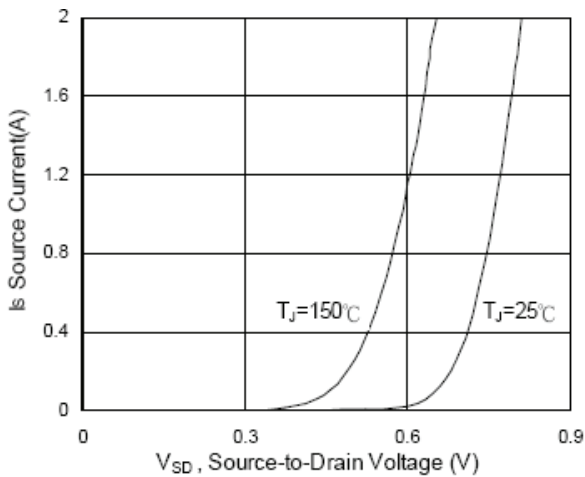
Gate Charge



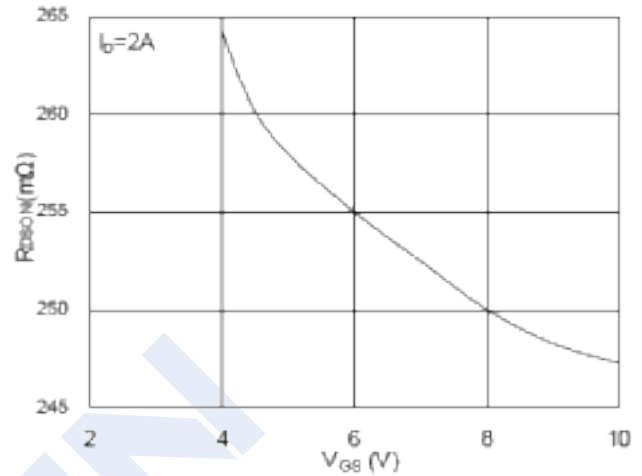
On-Resistance vs. Junction Temperature

N-Channel MOSFET

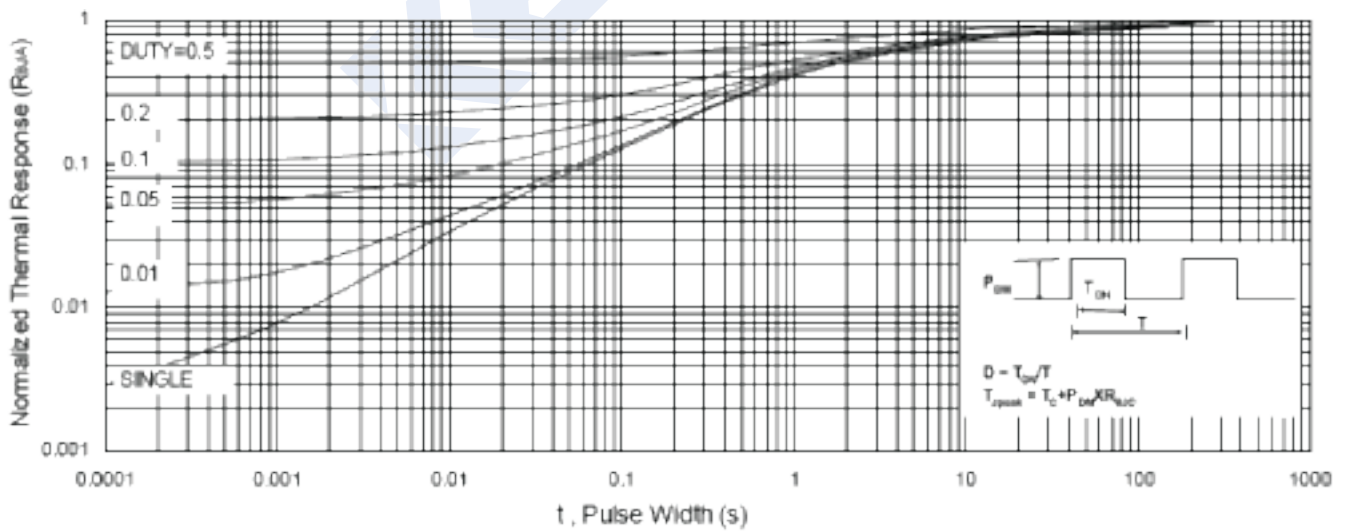
2SK3046DS



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-Source Voltage



Normalized Thermal Transient Impedance, Junction to Foot