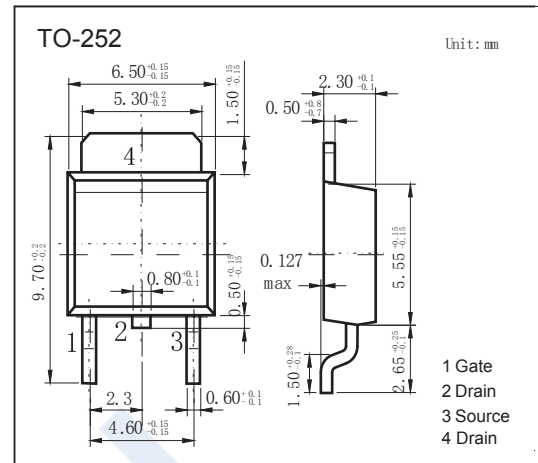


## N-Channel MOSFET

### 2SK3225

#### ■ Features

- $V_{DS} (V) = 60V$
- $I_D = 34 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 18m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 27m\Omega (V_{GS} = 4V)$
- Low input capacitance  
 $C_{iss} = 2100 pF TYP$



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	60	V	
Gate-Source Voltage	$V_{GS(AC)}$	$\pm 20$		
Gate-Source Voltage	$V_{GS(DC)}$	+20,-10		
Continuous Drain Current	$I_D$	$\pm 34$	A	
Pulsed Drain Current (Note.1)	$I_{DM}$	$\pm 136$		
Single Avalanche Current (Note.2)	$I_{AS}$	15		
Single Avalanche Energy (Note.2)	$E_{AS}$	22	mJ	
Power Dissipation	$P_D$	$T_c = 25^\circ C$	40	W
		$T_a = 25^\circ C$	2	
Junction Temperature	$T_J$	150	$^\circ C$	
Storage Temperature Range	$T_{stg}$	-55 to 150		

Note.1:  $PW \leq 10 \mu s$ , Duty cycle  $\leq 1\%$

Note.2: Starting  $T_{ch} = 25^\circ C$ ,  $V_{DD} = 30 V$ ,  $R_G = 25 \Omega$ ,  $V_{GS} = 20 \rightarrow 0 V$

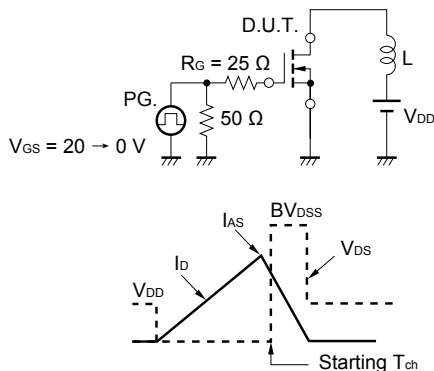
## N-Channel MOSFET

### 2SK3225

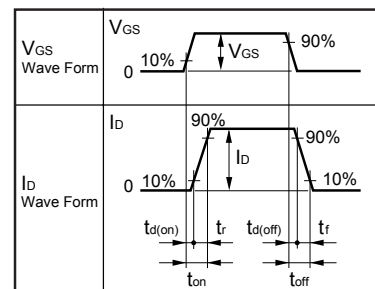
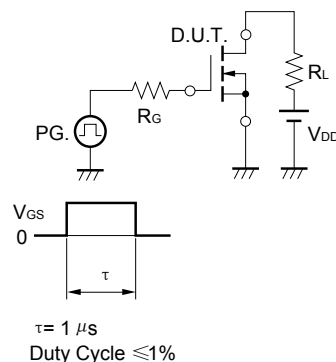
#### Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{DS}$	$I_D=250\ \mu\text{A}$ , $V_{GS}=0\text{V}$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60\text{V}$ , $V_{GS}=0\text{V}$			10	$\mu\text{A}$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS}=0\text{V}$ , $V_{GS}=\pm 20\text{V}$			$\pm 10$	$\mu\text{A}$
Gate Threshold Cut off	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	1		2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ , $I_D=17\text{A}$			18	$\text{m}\Omega$
		$V_{GS}=4\text{V}$ , $I_D=17\text{A}$			27	
Forward Transconductance	$g_{FS}$	$V_{DS}=10\text{V}$ , $I_D=17\text{A}$	13	27		S
Input Capacitance	$C_{iss}$	$V_{GS}=0\text{V}$ , $V_{DS}=10\text{V}$ , $f=1\text{MHz}$		2100		pF
Output Capacitance	$C_{oss}$			550		
Reverse Transfer Capacitance	$C_{rss}$			220		
Total Gate Charge	$Q_g$	$V_{GS}=10\text{V}$ , $V_{DS}=48\text{V}$ , $I_D=34\text{A}$		45		nC
Gate Source Charge	$Q_{gs}$			7		
Gate Drain Charge	$Q_{gd}$			13		
Turn-On Delay Time	$t_{d(on)}$		$V_{GS}=10\text{V}$ , $V_{DS}=30\text{V}$ , $I_D=17\text{A}$ , $R_G=10\ \Omega$		32	
Turn-On Rise Time	$t_r$			300		
Turn-Off Delay Time	$t_{d(off)}$			110		
Turn-Off Fall Time	$t_f$			140		
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F=34\text{A}$ , $V_{GS}=0$ , $di/dt=100\text{A}/\mu\text{s}$			60	
Body Diode Reverse Recovery Charge	$Q_{rr}$			95		
Maximum Body-Diode Continuous Current	$I_S$				34	A
Diode Forward Voltage	$V_{SD}$	$I_S=34\text{A}$ , $V_{GS}=0\text{V}$		0.94		V

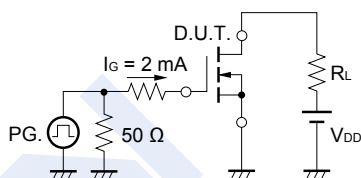
Test Circuit 1 Avalanche Capability



Test Circuit 2 Switching Time

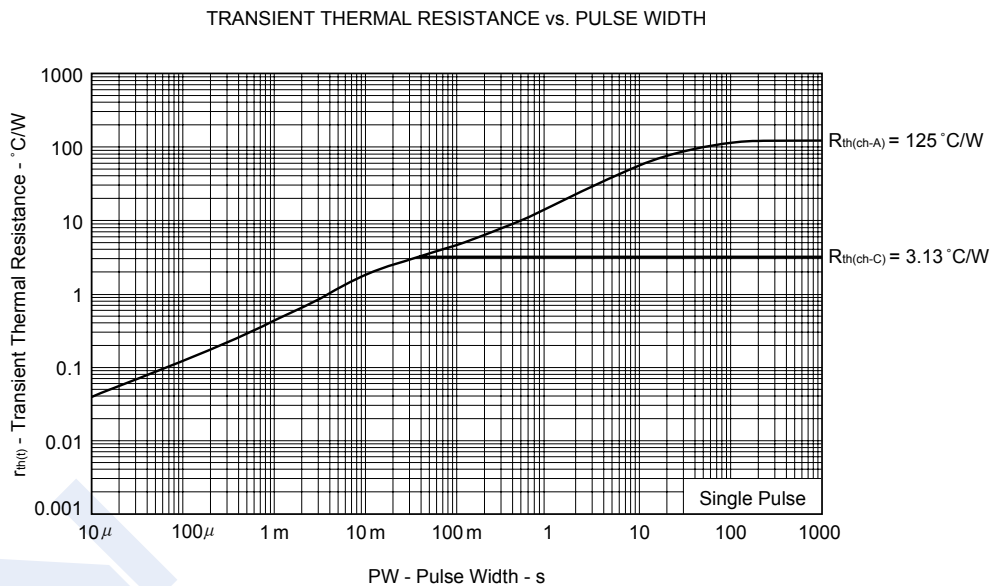
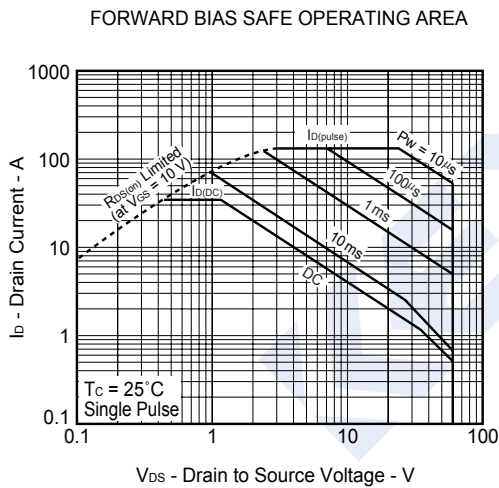
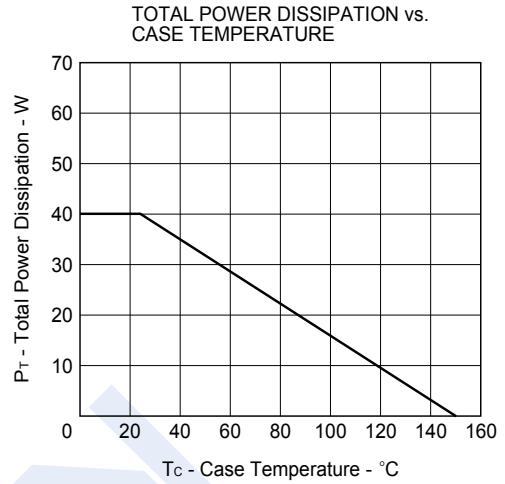
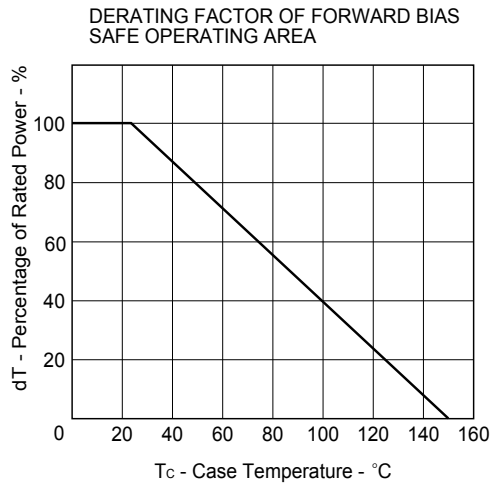


Test Circuit 3 Gate Charge



## N-Channel MOSFET 2SK3225

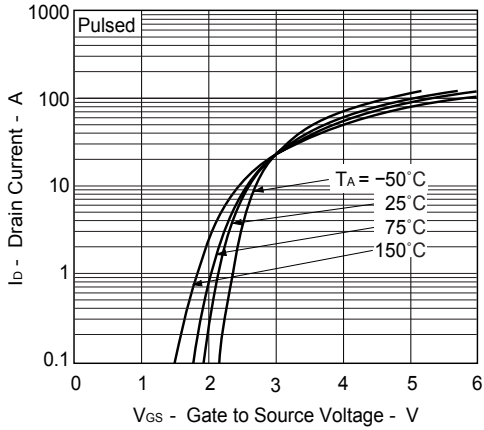
### Typical Characteristics



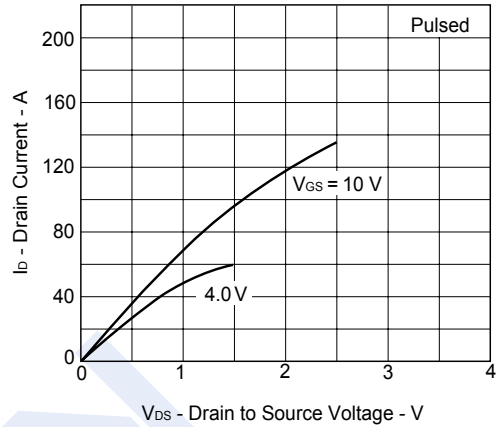
## N-Channel MOSFET 2SK3225

### Typical Characteristics

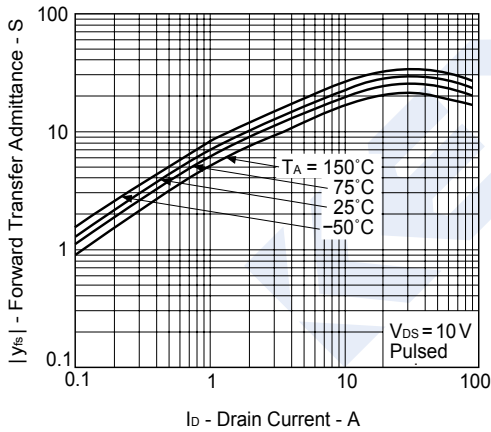
FORWARD TRANSFER CHARACTERISTICS



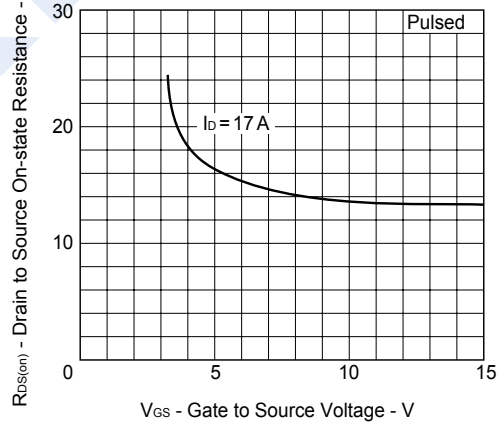
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



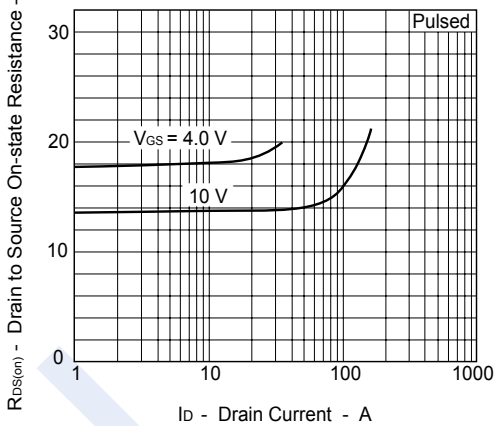
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



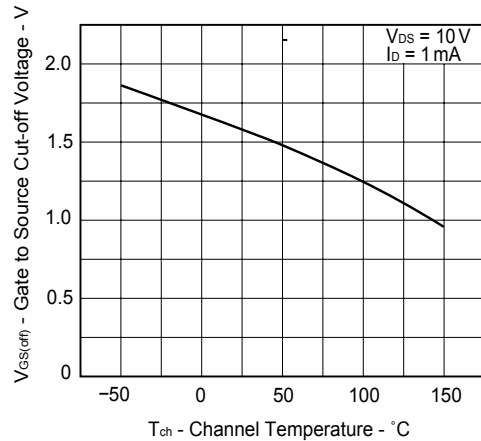
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



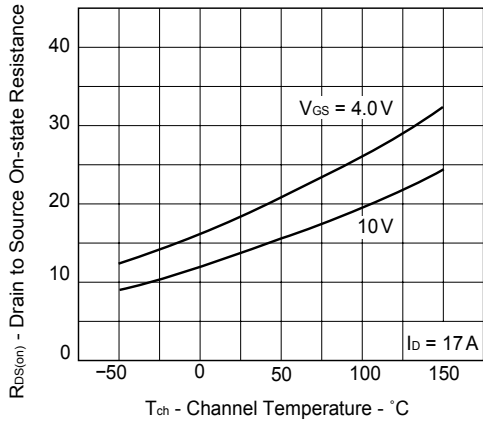
GATE TO SOURCE CUT-OFF VOLTAGE vs. CHANNEL TEMPERATURE



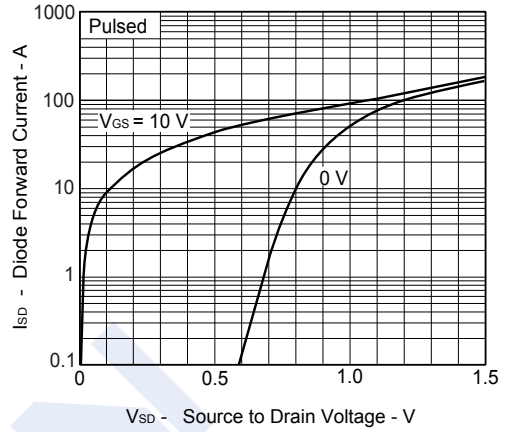
## N-Channel MOSFET 2SK3225

### Typical Characteristics

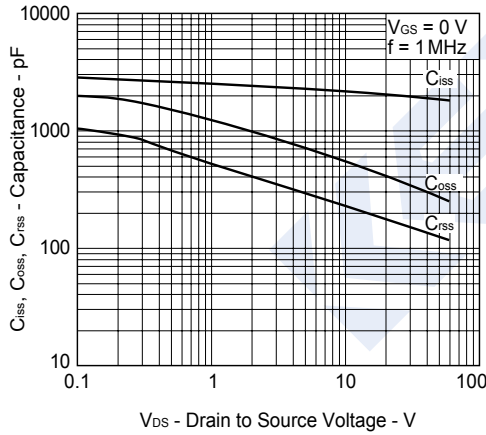
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



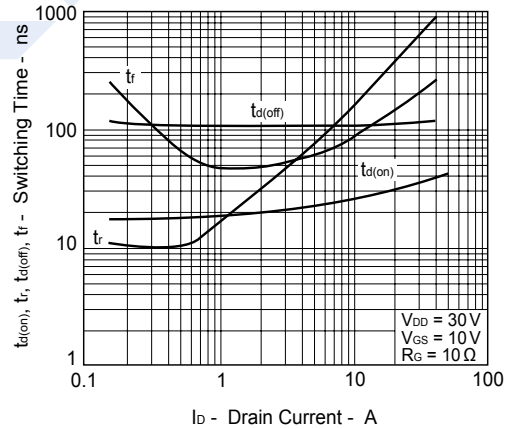
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



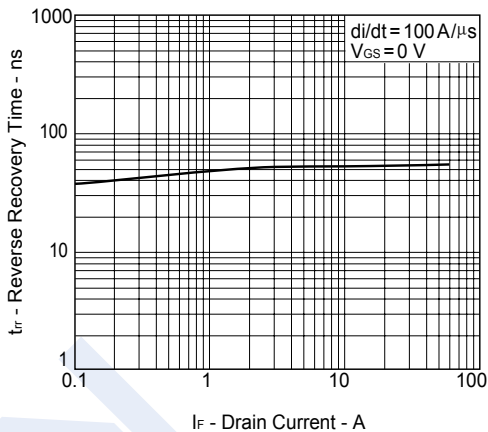
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



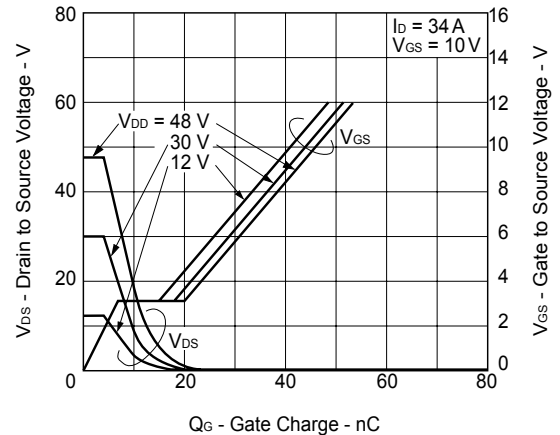
SWITCHING CHARACTERISTICS



REVERSE RECOVERY TIME vs. DRAIN CURRENT



DYNAMIC INPUT/OUTPUT CHARACTERISTICS



## N-Channel MOSFET

### 2SK3225

#### ■ Typical Characteristics

