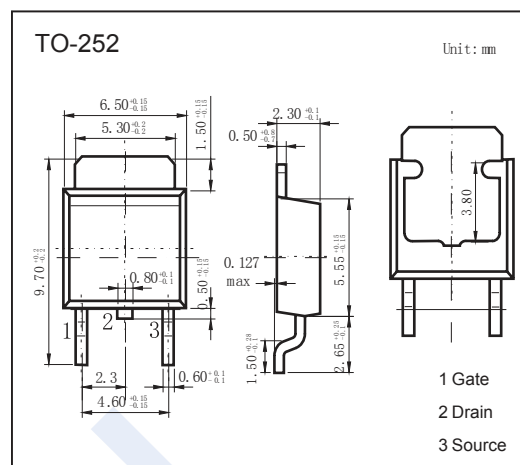
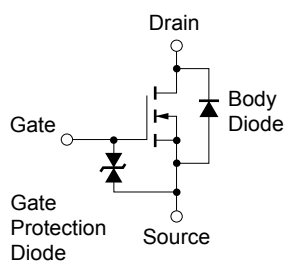


N-Channel MOSFET

2SK3224-Z

■ Features

- $V_{DS} (V) = 60V$
- $I_D = 20 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 40m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 60m\Omega (V_{GS} = 4V)$
- Low Ciss : Ciss = 790 pF TYP.



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage (AC)	V_{GS}	± 20	
		+20,-10	
Continuous Drain Current	I_D	20	A
Pulsed Drain Current (Note.1)	I_{DM}	70	
Single Avalanche Current (Note.2)	I_{AS}	10	
Power Dissipation $T_c = 25^\circ C$ $T_a = 25^\circ C$	P_D	25	W
		1	
Single Avalanche Energy (Note.2)	E_{AS}	10	mJ
Thermal Resistance.Junction- to-Ambient	R_{thJA}	125	$^\circ C/W$
Thermal Resistance.Junction- to-Case	R_{thJC}	5	
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 $T_J = 25^\circ C$, $R_G = 25\Omega$, $V_{GS} = 20V - 0V$

N-Channel MOSFET

2SK3224-Z

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\ \mu A$, $V_{GS}=0V$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$, $V_{GS}=0V$			10	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 10	μA
Gate to Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS}=10V$, $I_D=1mA$	1		2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$, $I_D=10A$			40	$m\ \Omega$
		$V_{GS}=4V$, $I_D=10A$			60	
Forward Transconductance	g_{FS}	$V_{GS}=10V$, $I_D=10A$	8	15		S
Input Capacitance	C_{iss}	$V_{GS}=0V$, $V_{DS}=10V$, $f=1MHz$		790		pF
Output Capacitance	C_{oss}			240		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	Q_g	$V_{GS(on)}=10V$, $V_{DS}=48V$, $I_D=20A$		20		nC
Gate Source Charge	Q_{gs}			3		
Gate Drain Charge	Q_{gd}			6.5		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS(on)}=10V$, $V_{DS}=30V$, $I_D=10A$, $R_G=10\ \Omega$		19		ns
Turn-On Rise Time	t_r			165		
Turn-Off DelayTime	$t_{d(off)}$			62		
Turn-Off Fall Time	t_f			71		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20A$, $V_{GS}=0V$, $di/dt=100A/\mu s$		40		nC
Body Diode Reverse Recovery Charge	Q_{rr}			45		
Diode Forward Voltage	V_{SD}	$I_F=20A$, $V_{GS}=0V$		0.93		V