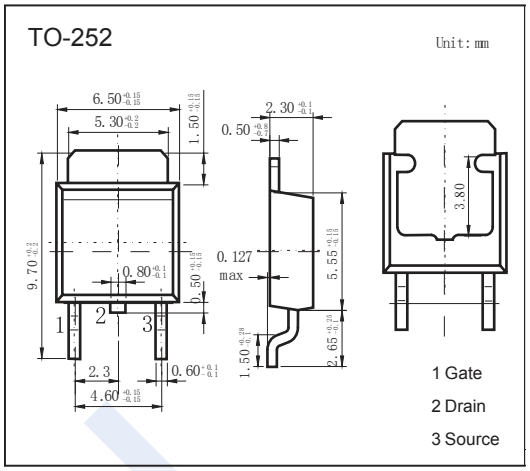
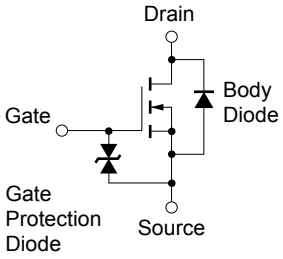
N-Channel MOSFET
2SK3224-Z



■ Features

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



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage	(AC)	V_{GS}	±20	
	(DC)		+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	Tc = 25°C	P_D	25	W
	Ta = 25°C		1	
Single Avalanche Energy	(Note.2)	E_{AS}	10	mJ
Thermal Resistance.Junction- to-Ambient		R_{thJA}	125	℃/W
Thermal Resistance.Junction- to-Case		R_{thJC}	5	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: PW ≤ 10 μs, Duty cycle ≤ 1 %

Note.2: Starting T_J = 25 °C, R_G = 25 Ω , V_{GS} = 20 V - 0 V

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			10	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	uA
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	mΩ
		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=10Ω		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} = 0 V, dI/dt= 100A/us		40		
Body Diode Reverse Recovery Charge	Q_{rr}			45		nC
Diode Forward Voltage	V_{SD}	I_F=20 A,V_{GS}=0V		0.93		V