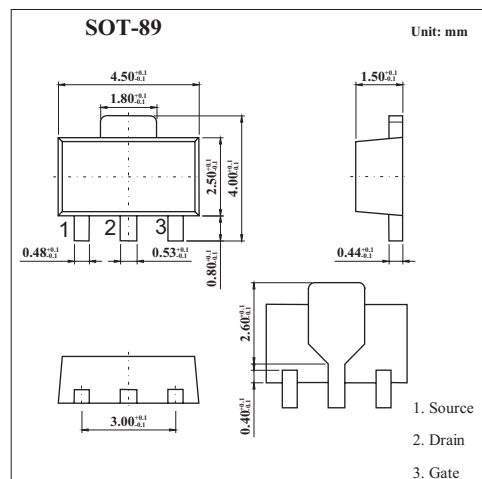
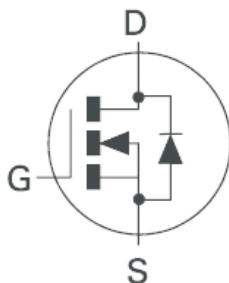


250V N-Channel Enhancement Mode MOSFET

KVN4525Z

■ Features

- High voltage
- Low on-resistance
- Fast switching speed
- Low gate drive
- Low threshold
- SOT89 package

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	250	V
Gate Source Voltage	V_{GS}	± 40	V
Continuous Drain Current ($V_{GS}=10\text{V}$; $T_A=25^\circ\text{C}$)*1 ($V_{GS}=10\text{V}$; $T_A=70^\circ\text{C}$)*1	I_D	240	mA
	I_D	192	mA
Pulsed Drain Current *3	I_{DM}	1.44	A
Continuous Source Current (Body Diode)	I_S	1.1	A
Pulsed Source Current (Body Diode)	I_{SM}	1.44	A
Power Dissipation at $T_A=25^\circ\text{C}$ *1	P_D	1.2	W
Linear Derating Factor		9.6	mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ\text{C}$
Junction to Ambient *1	$R_{\theta JA}$	103	$^\circ\text{C}/\text{W}$
Junction to Ambient*2	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$

*1 For a device surface mounted on 25mm X 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

*2 For a device surface mounted on FR4 PCB measured at $t \leq 5$ secs.

*3 Repetitive rating - pulse width limited by maximum junction temperature. Refer to Transient Thermal Impedance graph.

KVN4525Z■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	250	285		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=250\text{V}$, $V_{GS}=0\text{V}$		35	500	nA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 40\text{V}$, $V_{DS}=0\text{V}$		± 1	± 100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$I_D=1\text{mA}$, $V_{DS}=V_{GS}$	0.8	1.4	1.8	V
Static Drain-Source On-State Resistance *1	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=500\text{mA}$		5.6	8.5	Ω
		$V_{GS}=4.5\text{V}$, $I_D=360\text{mA}$		5.9	9.0	Ω
		$V_{GS}=2.4\text{V}$, $I_D=20\text{mA}$		6.4	9.5	Ω
Forward Transconductance *3	g_{fs}	$V_{DS}=10\text{V}$, $I_D=0.3\text{A}$	0.3	475		ms
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$		72		pF
Output Capacitance	C_{oss}			11		pF
Reverse Transfer Capacitance	C_{rss}			3.6		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=50\text{V}$, $I_D=-200\text{mA}$ $R_G=6.0\Omega$, $R_D=4.4\Omega$ *2,3		1.25		ns
Rise Time	t_r			1.70		ns
Turn-Off Delay Time	$t_{d(off)}$			11.40		ns
Fall Time	t_f			3.5		ns
Total Gate Charge	Q_g	$V_{DS}=25\text{V}$, $V_{GS}=10\text{V}$, $I_D=360\text{mA}$ *2,3		2.6	3.65	nC
Gate-Source Charge	Q_{gs}			0.2	0.28	nC
Gate Drain Charge	Q_{gd}			0.5	0.70	nC
Diode Forward Voltage *1	V_{SD}	$T_J=25^\circ\text{C}$, $I_S=360\text{mA}$, $V_{GS}=0\text{V}$			0.97	V
Reverse Recovery Time *3	t_{rr}	$T_J=25^\circ\text{C}$, $I_F=360\text{mA}$, $di/dt=100\text{A}/\mu\text{s}$		186	260	ns
Reverse Recovery Charge *3	Q_{rr}			34	48	nC

*1 Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.

*2 Switching characteristics are independent of operating junction temperature.

*3 For design aid only, not subject to production testing.

■ Marking

Marking	N52
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