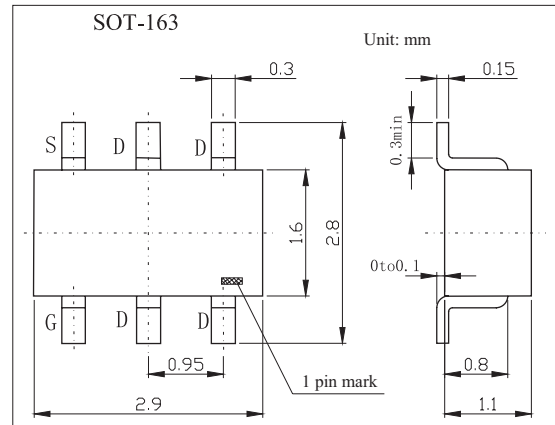
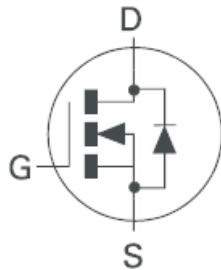


250V N-Channel Enhancement Mode MOSFET

KVN4525E6

■ Features

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

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	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	230	mA
	I_D	183	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	1.1	W
Linear Derating Factor		8.8	mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	T_j ; T_{stg}	-55 to +150	$^\circ\text{C}$
Junction to Ambient*1	$R_{\theta JA}$	113	$^\circ\text{C}/\text{W}$
Junction to Ambient*2	$R_{\theta JA}$	65	$^\circ\text{C}/\text{W}$

*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

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	250	285		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=250V, V_{GS}=0V$		35	500	nA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 40V, V_{DS}=0V$		± 1	± 100	nA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$I_D=1mA, V_{DS}=V_{GS}$	0.8	1.4	1.8	V
Static Drain-Source On-State Resistance *1	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$		5.6	8.5	Ω
		$V_{GS}=4.5V, I_D=360mA$		5.9	9.0	
		$V_{GS}=2.4V, I_D=20mA$		6.4	9.5	
Forward Transconductance *3	g_{fs}	$V_{DS}=10V, I_D=0.3A$	0.3	0.475		S
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		72		pF
Output Capacitance	C_{oss}			11		pF
Reverse Transfer Capacitance	C_{rss}			3.6		pF
Turn-On Delay Time	$t_{d(on)}$			1.25		ns
Rise Time	t_r	$V_{DD}=30V, I_D=360mA, R_G=50\Omega, V_{qs}=10V$ *2		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	$V_{DS}=25V, V_{GS}=10V, I_D=360mA$ *2		2.6	3.65	nC
Gate-Source Charge	Q_{gs}			0.2	0.28	nC
Gate Drain Charge	Q_{gd}			0.5	0.7	nC
Diode Forward Voltage*1	V_{SD}	$T_j=25^\circ C, I_S=360mA, V_{GS}=0V$			0.97	V
Reverse Recovery Time *3	t_{rr}	$T_j=25^\circ C, I_F=360mA, di/dt=100A/\mu s$		186	260	ns
Reverse Recovery Charge *3	Q_{rr}			34	48	nC

*1 Measured under pulsed conditions. Width=300 μ s. 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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