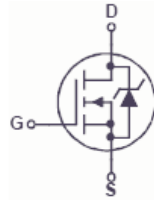
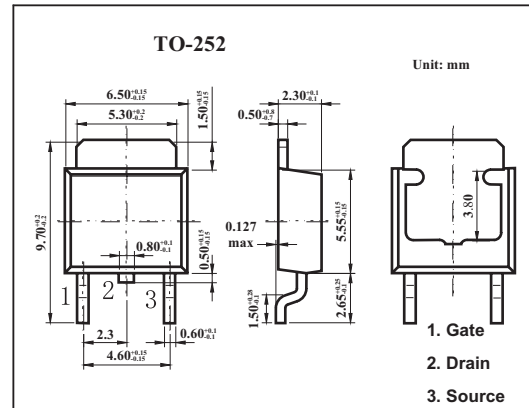


N-Channel PowerTrench MOSFET

KDD2572

■ Features

- $r_{DS(ON)} = 45m\Omega$ (Typ.), $V_{GS} = 10V$, $I_D = 9A$
- $Q_{g(tot)} = 26nC$ (Typ.), $V_{GS} = 10V$
- Low Miller Charge
- Low Q_{RR} Body Diode
- UIS Capability (Single Pulse and Repetitive Pulse)
- Qualified to AEC Q101

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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	V_{DS}	150	V
Gate to Source Voltage	V_{GS}	± 20	V
Drain Current Continuous ($T_c = 25^\circ C$, $V_{GS} = 10V$)	I_D	29	A
Drain Current Continuous ($T_c = 100^\circ C$, $V_{GS} = 10V$)		20	A
Drain Current Continuous ($T_c = 100^\circ C$, $V_{GS} = 10V$, $R_{\theta JA} = 52^\circ C/W$)		4	A
Single Pulse Avalanche Energy *	EAS	36	mJ
Power dissipation	P_D	135	W
Derate above $25^\circ C$	P_D	0.9	W/ $^\circ C$
Operating and Storage Temperature	T_J, T_{STG}	-55 to 175	$^\circ C$
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.11	$^\circ C/W$
Thermal Resistance Junction to Ambient to252	$R_{\theta JA}$	100	$^\circ C/W$
Thermal Resistance Junction to Ambient to252, 1in ² copper pad area	$R_{\theta JA}$	52	$^\circ C/W$

* Starting $T_J = 25^\circ C$, $L = 0.2$ mH, $I_{AS} = 19A$.

KDD2572

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	BVDSS	$I_D = 250 \mu A, V_{GS} = 0V$	150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 120V, V_{GS} = 0V$			1	μA
		$V_{DS} = 120V, V_{GS} = 0V, T_C = 150^\circ C$			250	
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	2		4	V
Drain to Source On-Resistance	$r_{DS(ON)}$	$I_D = 9A, V_{GS} = 10V$		0.045	0.054	Ω
		$I_D = 4A, V_{GS} = 6V,$		0.05	0.075	
		$I_D = 9A, V_{GS} = 10V, T_C = 175^\circ C$		0.126	0.146	
Input Capacitance	C_{ISS}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		1770		pF
Output Capacitance	C_{OSS}			183		pF
Reverse Transfer Capacitance	C_{RSS}			40		pF
Total Gate Charge at 10V	$Q_{g(TOT)}$	$V_{GS} = 0V \text{ to } 10V, V_{DD} = 75V, I_D = 9A, I_g = 1.0mA$		26	34	nC
Threshold Gate Charge	$Q_{g(TH)}$	$V_{GS} = 0V \text{ to } 2V, V_{DD} = 75V, I_D = 9A, I_g = 1.0mA$		3.3	4.3	nC
Gate to Source Gate Charge	Q_{gs}	$V_{DD} = 75V, I_D = 9A, I_g = 1.0mA$		8		nC
Gate Charge Threshold to Plateau	Q_{gs2}			5		nC
Gate to Drain "Miller" Charge	Q_{gd}			6		nC
Turn-On Time	t_{ON}	$V_{DD} = 75V, I_D = 33A, V_{GS} = 10V, R_{GS} = 11 \Omega$			36	ns
Turn-On Delay Time	$t_{d(ON)}$			11		ns
Rise Time	t_r			14		ns
Turn-Off Delay Time	$t_{d(OFF)}$			31		ns
Fall Time	t_f			14		ns
Turn-Off Time	t_{OFF}					66
Source to Drain Diode Voltage	V_{SD}	$I_{SD} = 9A$			1.25	V
		$I_{SD} = 4A$			1.0	V
Reverse Recovery Time	t_{rr}	$I_{SD} = 9A, di_{SD}/dt = 100A/\mu s$			74	ns
Reverse Recovery Charge	Q_{RR}	$I_{SD} = 9A, di_{SD}/dt = 100A/\mu s$			169	nC