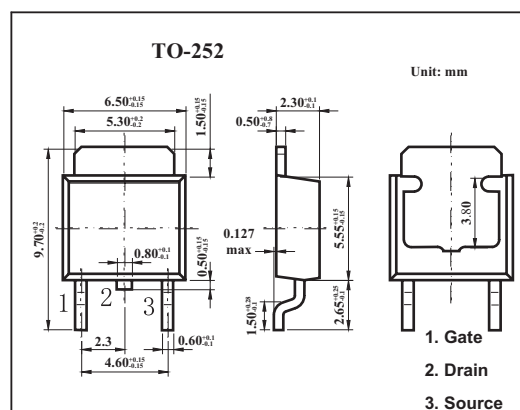
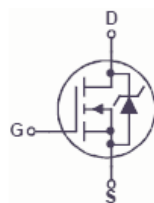


N-Channel PowerTrench MOSFET

KDD2572

■ Features

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

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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	V_{DS}	150	V
Gate to Source Voltage	V_{GS}	± 20	V
Drain Current Continuous ($T_c = 25^\circ\text{C}$, $V_{GS} = 10\text{V}$)	I_D	29	A
Drain Current Continuous ($T_c = 100^\circ\text{C}$, $V_{GS} = 10\text{V}$)		20	A
Drain Current Continuous ($T_c = 100^\circ\text{C}$, $V_{GS} = 10\text{V}$, $R_{\theta JA} = 52^\circ\text{C/W}$)		4	A
Single Pulse Avalanche Energy *	E_{AS}	36	mJ
Power dissipation	P_D	135	W
Derate above 25°C	P_D	0.9	W/ $^\circ\text{C}$
Operating and Storage Temperature	T_J, T_{STG}	-55 to 175	$^\circ\text{C}$
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.11	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient to 252	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient to 252, 1in ² copper pad area	$R_{\theta JA}$	52	$^\circ\text{C/W}$

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

KDD2572

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	BVDSS	Id = 250 μ A, VGS = 0V	150			V
Zero Gate Voltage Drain Current	IDSS	VDS = 120V, VGS = 0V			1	μ A
		VDS = 120V, VGS = 0V, Tc = 150°C			250	
Gate to Source Leakage Current	IGSS	VGS = $\pm$ 20V			$\pm$ 100	nA
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = 250 μ A	2		4	V
Drain to Source On-Resistance	rDS(ON)	ID = 9A, VGS = 10V		0.045	0.054	Ω
		ID = 4A, VGS = 6V,		0.05	0.075	
		ID = 9A, VGS = 10V, Tc = 175°C		0.126	0.146	
Input Capacitance	Ciss	VDS = 25V, VGS = 0V, f = 1MHz		1770		pF
Output Capacitance	COSS			183		pF
Reverse Transfer Capacitance	CRSS			40		pF
Total Gate Charge at 10V	Qg(TOT)	VGS=0V to 10V, VDD=75V, ID=9A, Ig=1.0mA		26	34	nC
Threshold Gate Charge	Qg(TH)	VGS=0V to 2V, VDD=75V, ID=9A, Ig=1.0mA		3.3	4.3	nC
Gate to Source Gate Charge	Qgs	VDD = 75V, ID = 9A, Ig = 1.0mA		8		nC
Gate Charge Threshold to Plateau	Qgs2			5		nC
Gate to Drain "Miller" Charge	Qgd			6		nC
Turn-On Time	tON	VDD = 75V, ID = 33A, VGS = 10V, RGS = 11 Ω			36	ns
Turn-On Delay Time	td(ON)			11		ns
Rise Time	tr			14		ns
Turn-Off Delay Time	td(OFF)			31		ns
Fall Time	tf			14		ns
Turn-Off Time	toFF				66	ns
Source to Drain Diode Voltage	VSD	ISD = 9A			1.25	V
		ISD = 4A			1.0	V
Reverse Recovery Time	trr	ISD = 9A, diSD/dt= 100A/ μ s			74	ns
Reverse Recovery Charge	QRR	ISD = 9A, diSD/dt= 100A/ μ s			169	nC