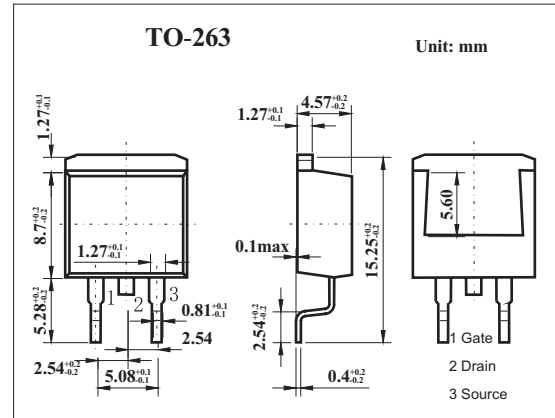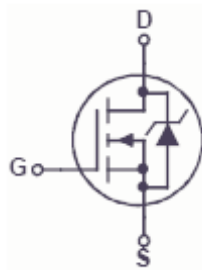# N-Channel PowerTrench MOSFET
KDB2572(FDB2572)

■ Features

● $r_{DS(ON)}$ = 45m Ω (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)

TO-263   **Unit: mm**

1 Gate
2 Drain
3 Source

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	150	V
Gate to source voltage	V_{GSS}	$\pm$20	V
Drain current-Continuous T_C=25℃	I_D	29	A
T_A=25℃		4	A
Power dissipation	P_D	135	W
Derate above 25℃		0.9	W/℃
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	43	℃/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.11	℃/W
Channel temperature	T_{ch}	175	℃
Storage temperature	T_{stg}	-55 to +175	℃

KDB2572(FDB2572)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V$_{DSS}$	I$_D$=250μA，V$_{GS}$=0V	150			V
Drain cut-off current	I$_{DSS}$	V$_{DS}$=120V,V$_{GS}$=0			1	μA
		V$_{DS}$=120V,V$_{GS}$=0,T$_C$=150℃			250	μA
Gate leakage current	I$_{GSS}$	V$_{GS}$=±20V			±100	nA
Gate threshold voltage	V$_{GS(th)}$	V$_{DS}$ = V$_{GS}$, I$_D$ = 250μA	2.0		4.0	V
Drain to source on-state resistance	R$_{DS(on)}$	V$_{GS}$=10V,I$_D$=9A		0.045	0.054	Ω
		V$_{GS}$=6V,I$_D$=4A		0.050	0.075	
		V$_{GS}$=10V,I$_D$=9A,T$_C$=175℃		0.126	0.146	
Input capacitance	C$_{iss}$	V$_{DS}$=25V,V$_{GS}$=0,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 to 10V		26	34	nC
Threshold Gate Charge	Q$_{g(TH)}$	V$_{GS}$ = 0V to 2V		3.3	4.3	nC
Gate to Source Gate Charge	Q$_{gs}$	V$_{DS}$ = 75 V, 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$_{DD}$ = 75 V, I$_D$ = 9 A, V$_{GS}$ = 10 V, R$_{GEN}$ = 11 Ω			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	ns
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$_{SD}$/d$_t$ =100A/μs			74	ns
Reverse Recovered Charge	Q$_{RR}$	I$_{SD}$ = 9A, dI$_{SD}$/d$_t$ =100A/μs			169	nC