150V N-Channel PowerTrench MOSFET
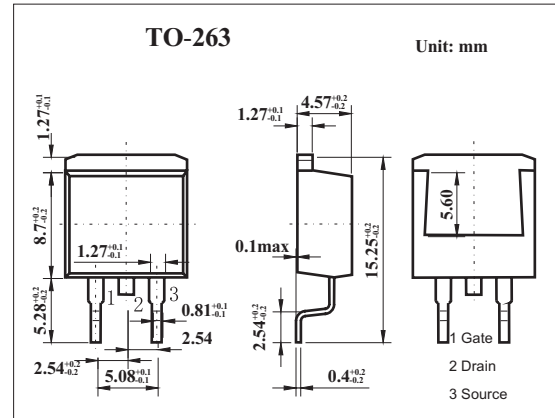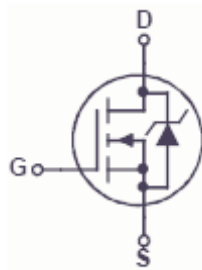# KDB2570(FDB2570)

■ Features

● 22 A, 150 V. $R_{DS(ON)}$ = 80 m Ω @ V_{GS} = 10 V

   $R_{DS(ON)}$ = 90 m Ω @ V_{GS} = 6 V

● Low gate charge

● Fast switching speed

● High performance trench technology for extremely

   low $R_{DS(ON)}$

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	I_D	22	A
Drain current-Pulsed	I_{DP}	50	A
Power dissipation	P_D	93	W
Derate above 25℃		0.63	W/℃
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.6	℃/W
Channel temperature	T_{ch}	175	℃
Storage temperature	T_{stg}	-55 to +175	℃

KDB2570(FDB2570)

■ 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	µ A
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	2.6	4.0	V
Drain to source on-state resistance	R$_{DS(on)}$	V$_{GS}$=10V,I$_D$=11A		61	80	m Ω
		V$_{GS}$=6V,I$_D$=10A		63	90	
		V$_{GS}$=10V,I$_D$=11A,T$_C$=125℃		127	175	
On□State Drain Current	I$_{D(on)}$	V$_{GS}$ = 10 V, V$_{DS}$ = 10 V	25			A
Forward Transconductance	g$_{FS}$	V$_{DS}$ = 10 V, I$_D$ = 11 A		39		S
Input capacitance	C$_{iss}$	V$_{DS}$=75V,V$_{GS}$=0,f=1MHZ		1911		pF
Output capacitance	C$_{oss}$			106		pF
Reverse transfer capacitance	C$_{rss}$			33		pF
Total Gate Charge	Qg	V$_{DS}$ = 75 V, I$_D$ = 11 A,V$_{GS}$ = 10 V*		40	56	nC
Gate-Source Charge	Qgs			7		nC
Gate-Drain Charge	Qgd			12		nC
Turn-On Delay Time	t$_{d(ON)}$	V$_{DD}$ = 75 V, I$_D$ = 1 A, V$_{GS}$ = 10 V, R$_{GEN}$ = 6 Ω*		12	22	ns
Rise Time	t$_r$			5	10	ns
Turn-Off Delay Time	t$_{d(OFF)}$			33	53	ns
Fall Time	t$_f$			23	37	ns
Maximum Continuous Drain-Source Diode Forward Current	I$_S$				22	A
Source to Drain Diode Voltage	V$_{SD}$	V$_{GS}$ = 0 V, I$_S$ = 11 A *		0.83	1.3	V

* Pulse Test: Pulse Width ＜ 300µs, Duty Cycle ＜ 2.0%