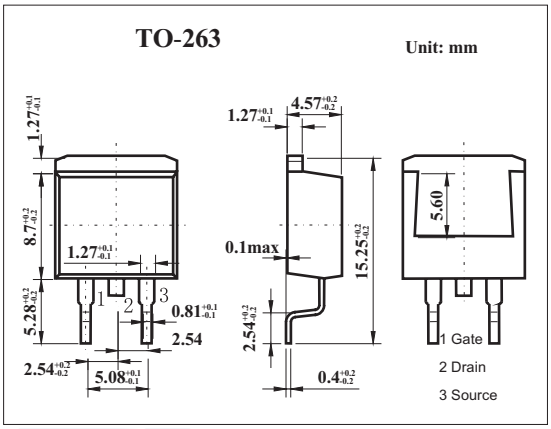
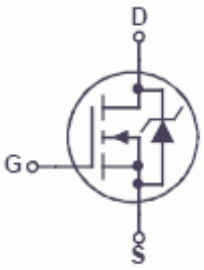
200V N-Channel PowerTrench MOSFET
KDB2670(FDB2670)

Features

- 19 A, 200 V. $R_{DS(ON)}$ = 130 mΩ @ V_{GS} = 10 V
- Low gate charge (27 nC typical)
- Fast switching speed
- High performance trench technology for extremely low $R_{DS(ON)}$
- High power and current handling capability





Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DSS}	200	V
Gate to source voltage	V_{GSS}	±20	V
Drain current-Continuous	I_D	19	A
Drain current-Pulsed	I_{DP}	40	A
Power dissipation Derate above 25℃	P_D	93 0.63	W W/℃
Peak Diode Recovery dv/dt	dv/dt	3.2	V/ns
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}	-65 to +175	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V_{DSS}	I_D=250μA，V_{GS}=0V	200			V
Drain cut-off current	I_{DSS}	V_{DS}=160V,V_{GS}=0			1	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	4.5	V
Drain to source on-state resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=10A		98	130	m Ω
		V_{GS}=10V,I_D=10A,T_J=125℃		205	285	
On□State Drain Current	$I_{D(on)}$	V_{GS} = 10 V, V_{DS} = 10 V	20			A
Forward Transconductance	g_{FS}	V_{DS} = 10 V, I_D = 10 A		24		S
Input capacitance	C_{iss}	V_{DS}=100V,V_{GS}=0,f=1MHZ		1320		pF
Output capacitance	C_{oss}			71		pF
Reverse transfer capacitance	C_{rss}			24		pF
Total Gate Charge	Qg	V_{DS} = 100 V, I_D = 10 A,V_{GS} = 10 V*		27	38	nC
Gate-Source Charge	Qgs			7		nC
Gate-Drain Charge	Qgd			10		nC
Turn-On Delay Time	$t_{d(ON)}$	V_{DD} = 100V, I_D = 1 A, V_{GS} = 10 V, R_{GEN} = 6 Ω*		14	25	ns
Rise Time	t_r			5	10	ns
Turn-Off Delay Time	$t_{d(OFF)}$			26	41	ns
Fall Time	t_f			23	37	ns
Maximum Continuous Drain-Source Diode Forward Current	I_S				19	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%