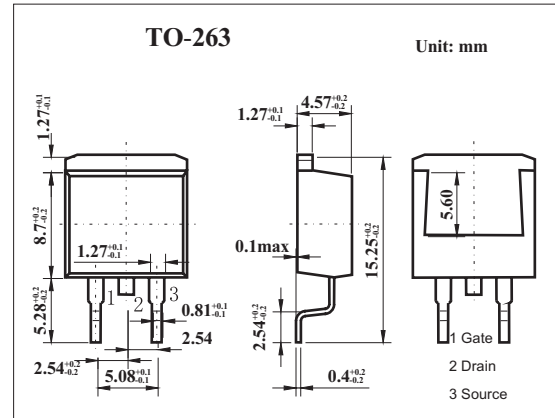
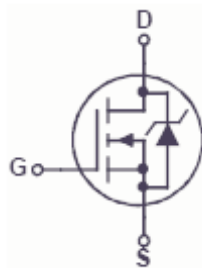


## N-Channel PowerTrench MOSFET

### KDB3632(FDB3632)

#### ■ Features

- $r_{DS(ON)} = 7.5\text{m}\Omega$  (Typ.),  $V_{GS} = 10\text{V}$ ,  $I_D = 80\text{A}$
- $Q_{g(tot)} = 84\text{nC}$  (Typ.),  $V_{GS} = 10\text{V}$
- Low Miller Charge
- Low QRR Body Diode
- UIS Capability (Single Pulse and Repetitive Pulse)



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	$V_{DS}$	100	V
Gate to source voltage	$V_{GS}$	$\pm 20$	V
Drain current-Continuous	$I_D$	$T_c < 111^\circ\text{C}$	80
		$T_A = 25^\circ\text{C}$	12
Power dissipation	$P_D$	310	W
		Derate above $25^\circ\text{C}$	2.07
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	43	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.48	$^\circ\text{C}/\text{W}$
Channel temperature	$T_{ch}$	175	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +175	$^\circ\text{C}$

**KDB3632(FDB3632)**

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Drain to source breakdown voltage	V <sub>DSS</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V	100			V	
Drain cut-off current	I <sub>DSS</sub>	V <sub>Ds</sub> =80V, V <sub>GS</sub> =0			1	μA	
		V <sub>Ds</sub> =80V, V <sub>GS</sub> =0, T <sub>c</sub> =150°C			250	μA	
Gate leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V			±100	nA	
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>Ds</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2.0		4.0	V	
Drain to source on-state resistance	R <sub>Ds(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =80A		0.0075	0.009	Ω	
		V <sub>GS</sub> =6V, I <sub>D</sub> =40A		0.009	0.015		
		V <sub>GS</sub> =10V, I <sub>D</sub> =80A, T <sub>c</sub> =175°C		0.018	0.022		
Input capacitance	C <sub>iss</sub>	V <sub>Ds</sub> =25V, V <sub>GS</sub> =0, f=1MHZ		6000		pF	
Output capacitance	C <sub>oss</sub>			820		pF	
Reverse transfer capacitance	C <sub>rss</sub>			200		pF	
Total Gate Charge at 10V	Q <sub>g(TOT)</sub>	V <sub>GS</sub> = 0V to 10V		84	110	nC	
Threshold Gate Charge	Q <sub>g(TH)</sub>	V <sub>GS</sub> = 0V to 2V		11	14	nC	
Gate to Source Gate Charge	Q <sub>gs</sub>	V <sub>Ds</sub> = 50 V, I <sub>D</sub> = 80A, I <sub>g</sub> =1.0mA		30		nC	
Gate Charge Threshold to Plateau	Q <sub>gs2</sub>			20		nC	
Gate to Drain "Miller" Charge	Q <sub>gd</sub>			20		nC	
Turn-On Time	t <sub>ON</sub>					102	ns
Turn-On Delay Time	t <sub>d(ON)</sub>				30		ns
Rise Time	t <sub>r</sub>	V <sub>DD</sub> = 50 V, I <sub>D</sub> = 80A, V <sub>GS</sub> = 10 V, R <sub>GEN</sub> = 3.6 Ω		39		ns	
Turn-Off Delay Time	t <sub>d(OFF)</sub>			96		ns	
Fall Time	t <sub>f</sub>			46		ns	
Turn-Off Time	t <sub>OFF</sub>					213	ns
Source to Drain Diode Voltage	V <sub>SD</sub>		I <sub>SD</sub> =80A			1.25	V
		I <sub>SD</sub> =40A			1.0	V	
Reverse Recovery Time	t <sub>rr</sub>	I <sub>SD</sub> = 75A, di <sub>SD</sub> /dt = 100A/μs			64	ns	
Reverse Recovered Charge	Q <sub>RR</sub>	I <sub>SD</sub> = 75A, di <sub>SD</sub> /dt = 100A/μs			120	nC	