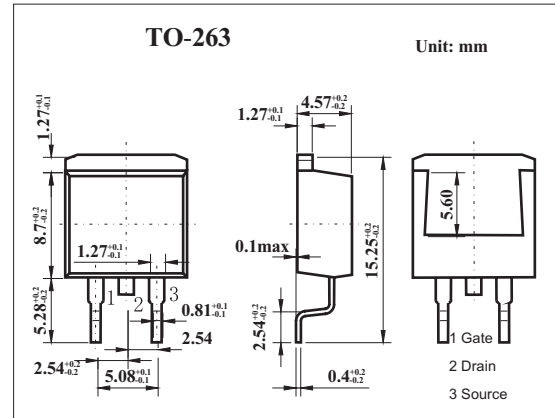
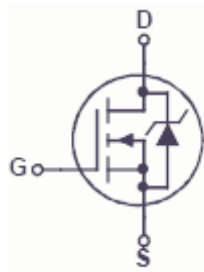


N-Channel PowerTrench MOSFET

KDB3652 (FDB3652)

■ Features

- $r_{DS(ON)} = 14\text{m}\Omega$ (Typ.), $V_{GS} = 10\text{V}$, $I_D = 61\text{A}$
- $Q_{g(tot)} = 41\text{nC}$ (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}	± 20	V
Drain current-Continuous	I_D	$T_c=25^\circ\text{C}$	61
		$T_A=25^\circ\text{C}$	9
Power dissipation Derate above 25°C	P_D	150	W
		1.0	W/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	43	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.0	$^\circ\text{C}/\text{W}$
Channel temperature	T_{ch}	175	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +175	$^\circ\text{C}$

KDB3652 (FDB3652)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Drain to source breakdown voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	105			V	
Drain cut-off current	I _{DSS}	V _{DS} =80V, V _{GS} =0			1	μA	
		V _{DS} =80V, V _{GS} =0, T _C =150°C			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 =61A		0.014	0.016	Ω	
		V _{GS} =6V, I _D =30A		0.018	0.026		
		V _{GS} =10V, I _D =61A, T _C =175°C		0.035	0.043		
Input capacitance	C _{iss}			2880		pF	
Output capacitance	C _{oss}	V _{DS} =25V, V _{GS} =0, f=1MHZ		390		pF	
Reverse transfer capacitance	C _{rss}			100		pF	
Total Gate Charge at 10V	Q _{g(TOT)}		V _{GS} = 0V to 10V		41	53	nC
Threshold Gate Charge	Q _{g(TH)}	V _{GS} = 0V to 2V		5	6.5	nC	
Gate to Source Gate Charge	Q _{gs}	V _{DS} = 50 V, I _D = 61A, I _g =1.0mA		15		nC	
Gate Charge Threshold to Plateau	Q _{gs2}			10		nC	
Gate to Drain "Miller" Charge	Q _{gd}			10		nC	
Turn-On Time	t _{ON}					146	ns
Turn-On Delay Time	t _{d(ON)}	V _{DD} = 50 V, I _D = 61A, V _{GS} = 10 V, R _{GEN} = 6.8 Ω		12		ns	
Rise Time	t _r			85		ns	
Turn-Off Delay Time	t _{d(OFF)}			26		ns	
Fall Time	t _f			45		ns	
Turn-Off Time	t _{OFF}					107	ns
Source to Drain Diode Voltage	V _{SD}		I _{SD} =61A			1.25	V
			I _{SD} =30A			1.0	V
Reverse Recovery Time	t _{rr}	I _{SD} = 61A, di _{SD} /dt = 100A/μs			62	ns	
Reverse Recovered Charge	Q _{RR}	I _{SD} = 61A, di _{SD} /dt = 100A/μs			45	nC	