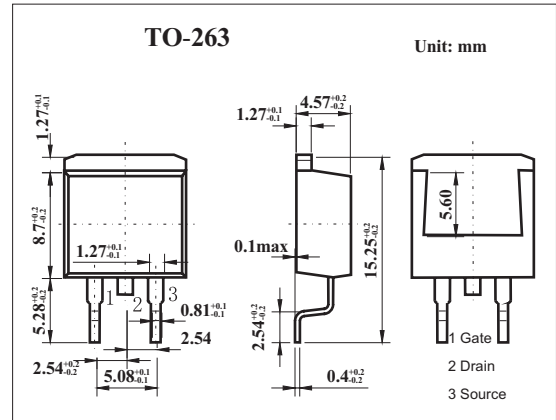


# KDB15N50(FDB15N50)

## ■ Features

- Low Gate Charge Qg results in Simple Drive Requirement
- Improved Gate, Avalanche and High Reapplied dv/dt Ruggedness
- Reduced rDS(ON)
- Reduced Miller Capacitance and Low Input Capacitance
- Improved Switching Speed with Low EMI

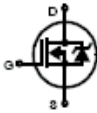


## ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Drain to source voltage	V <sub>DSS</sub>	500	V
Gate to source voltage	V <sub>GSS</sub>	±30	V
Drain current T <sub>C</sub> =25°C	I <sub>D</sub>	15	A
Drain current-pulsed	I <sub>DP</sub>	60	A
Power dissipation Derate above 25°C	P <sub>D</sub>	300 2	W W/°C
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	62	°C/W
Channel temperature	T <sub>ch</sub>	175	°C
Storage temperature	T <sub>stg</sub>	-55 to +175	°C

# KDB15N50(FDB15N50)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V <sub>DSS</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V	500			V
Drain cut-off current	I <sub>DSS</sub>	V <sub>DS</sub> =500V, V <sub>GS</sub> =0, T <sub>C</sub> =25°C			25	μA
Gate leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V			±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	3.4	4.0	V
Drain to source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =7.5A		0.33	0.38	Ω
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0, f=1MHZ		1850		pF
Output capacitance	C <sub>oss</sub>			230		pF
Reverse transfer capacitance	C <sub>rss</sub>			16		pF
Forward Transconductance	g <sub>fs</sub>	V <sub>DD</sub> = 10V, I <sub>D</sub> = 7.5A	10			S
Total Gate Charge at 10V	Q <sub>g(TOT)</sub>	V <sub>GS</sub> = 10V,		33	41	nC
Gate to Source Gate Charge	Q <sub>gs</sub>	V <sub>DS</sub> = 400V,		7.2	10	nC
Gate to Drain "Miller" Charge	Q <sub>gd</sub>	I <sub>D</sub> = 15A		12	16	nC
Turn-on delay time	t <sub>on</sub>	I <sub>D</sub> =15A, R <sub>G</sub> =6.2Ω, V <sub>DD</sub> =250V, R <sub>D</sub> =17Ω		9		ns
Rise time	t <sub>r</sub>			5.4		ns
Turn-off delay time	t <sub>off</sub>			26		ns
Fall time	t <sub>f</sub>			5		ns
Reverse Recovery Time	t <sub>rr</sub>	I <sub>SD</sub> = 15A, di <sub>SD</sub> /dt = 100A/μs		470	730	ns
Reverse Recovered Charge	Q <sub>R</sub>	I <sub>SD</sub> = 15A, di <sub>SD</sub> /dt = 100A/μs		5	6.6	μC
Continuous Source Current	I <sub>S</sub>	MOSFET symbol showing the integral reverse p-n junction diode. 			15	A
Pulsed Source Current1	I <sub>SM</sub>					60