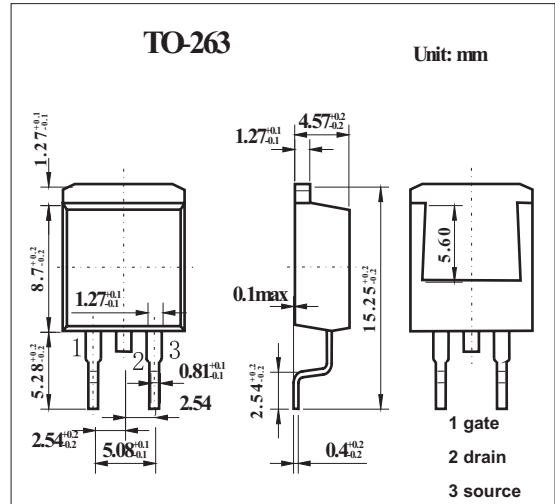
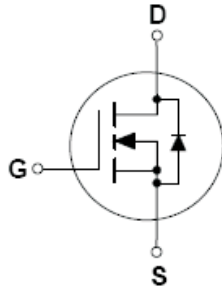


KDB6030L

■ Features

- 52A, 30 V. $R_{DS(ON)} = 0.0135 \Omega @ V_{GS} = 10 V$
 $R_{DS(ON)} = 0.020 \Omega @ V_{GS} = 4.5 V$
- Low gate charge (typical 34 nC).
- Low Crss (typical 175 pF).
- Fast switching speed.



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	V_{DS}	30	V
Gate to Source Voltage	V_{GS}	± 20	V
Drain Current Continuous	I_D	52	A
Drain Current Pulsed		156	A
Power dissipation @ $T_c=25^\circ C$ Derate above $25^\circ C$	P_D	75	W
	P_D	0.5	W/ $^\circ C$
Operating and Storage Temperature	T_J, T_{STG}	-65 to 175	$^\circ C$
Thermal Resistance Junction to Case	$R_{\theta JC}$	2	$^\circ C/W$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ C/W$

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Single Pulse Drain-Source Avalanche Energy *	W _{DSS}	V _{DD} = 15 V, I _D = 21A			150	mJ
Maximum Drain-Source Avalanche Current	I _{AR}				21	A
Drain-Source Breakdown Voltage	B _V DSS	V _{GS} = 0 V, I _D = 250 μ A	30			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta B_{V_{DSS}}}{\Delta T_J}$	I _D = 250 μ A, Referenced to 25°C		37		mV/°C
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V			10	μ A
Gate-Body Leakage, Forward	I _{GSSF}	V _{GS} = 20 V, V _{DS} = 0 V			100	nA
Gate-Body Leakage, Reverse	I _{GSSR}	V _{GS} = -20 V, V _{DS} = 0 V			-100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μ A	1	1.6	3	V
Gate Threshold Voltage Temperature Coefficient	$\frac{\Delta V_{GS(th)}}{\Delta T_J}$	I _D = 250 μ A, Referenced to 25°C		-4		mV/°C
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 26 A		0.0095	0.0135	m Ω
		V _{GS} = 10 V, I _D = 26 A, T _J = 125°C		0.014	0.023	
		V _{GS} = 4.5 V, I _D = 21 A,		0.015	0.02	
On-State Drain Current	I _{D(on)}	V _{GS} = 10 V, V _{DS} = 10 V	60			A
On-State Drain Current	I _{D(on)}	V _{GS} = 4.5 V, V _{DS} = 10 V	15			
Forward Transconductance	g _{FS}	V _{DS} = 10 V, I _D = 26 A		37		S
Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V, f = 1.0 MHz		1230		pF
Output Capacitance	C _{oss}			640		pF
Reverse Transfer Capacitance	C _{rss}			175		pF
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15 V, I _D = 52 A, V _{GS} = 10 V, R _{GEN} = 24 Ω *		7.6	15	ns
Turn-On Rise Time	t _r			150	210	ns
Turn-Off Delay Time	t _{d(off)}			29	46	ns
Turn-Off Fall Time	t _f			17	27	ns
Total Gate Charge	Q _g	V _{DS} = 12 V, I _D = 26A, V _{GS} = 10 V *		34	46	nC
Gate-Source Charge	Q _{gs}			6		nC
Gate-Drain Charge	Q _{gd}			8		nC
Maximum Continuous Drain-Source Diode Forward Current *	I _S				52	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 26 A *		0.91	1.3	V
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 26 A *T _J =125°C		0.8	1.2	V

* Pulse Test: Pulse Width ≤ 300 μ s, Duty Cycle ≤ 2.0%