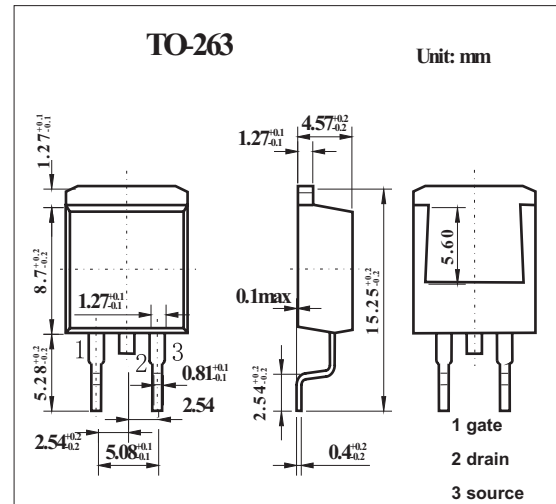
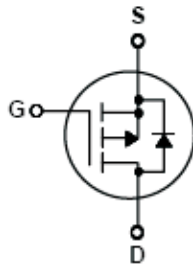


60V P-Channel MOSFET

KQB27P06

■ Features

- -27A, -60V, $R_{DS(on)} = 0.07 \Omega$ @ $V_{GS} = -10 V$
- Low gate charge (typical 33 nC)
- Low C_{rss} (typical 120pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- 175°C maximum junction temperature rating



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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	V_{DSS}	-60	V
Drain Current Continuous $T_c=25^\circ C$	I_D	-27	A
Drain Current Continuous $T_c=100^\circ C$		-19.1	A
Drain Current - Pulsed (Note 1)	I_{DM}	-108	A
Gate-Source Voltage	V_{GSS}	± 25	V
Single Pulsed Avalanche Energy (Note 2)	E_{AS}	560	mJ
Avalanche Current (Note 1)	I_{AR}	-27	A
Repetitive Avalanche Energy (Note 1)	E_{AR}	12	mJ
Peak Diode Recovery dv/dt (Note 3)	dv/dt	-7	V/ns
Power dissipation @ $T_a=25^\circ C$	P_D	3.75	W
Power dissipation @ $T_c=25^\circ C$		120	W
Derate above $25^\circ C$		0.8	W/ $^\circ C$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 175	$^\circ C$
Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	T_L	300	$^\circ C$
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.25	$^\circ C/W$
Thermal Resistance Junction to Ambient *	$R_{\theta JA}$	40	$^\circ C/W$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	$^\circ C/W$

* When mounted on the minimum pad size recommended (PCB Mount)

KQB27P06

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	B _{VDS}	V _{GS} = 0 V, I _D = -250 μA	-60			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta B_{VDS}}{\Delta T_J}$	I _D = -250 μA, Referenced to 25°C		-0.06		V/°C
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -48V, T _C =150°C			-10	μA
Gate-Body Leakage, Forward	I _{GSSF}	V _{GS} = -25 V, V _{DS} = 0 V			-100	nA
Gate-Body Leakage, Reverse	I _{GSSR}	V _{GS} = 25V, V _{DS} = 0 V			100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-2.0		-4.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10 V, I _D = -13.5A		0.055	0.07	Ω
Forward Transconductance	g _{FS}	V _{DS} = -30 V, I _D = -13.5 A		12.4		S
Input Capacitance	C _{iss}	V _{DS} = -25 V, V _{GS} = 0 V, f = 1.0 MHz		1100	1400	pF
Output Capacitance	C _{oss}			510	660	pF
Reverse Transfer Capacitance	C _{rss}			120	155	pF
Turn-On Delay Time	t _{d(on)}	V _{DD} = -30V, I _D = -13.5 A, R _G = 25 Ω (Note4,5)		18	45	ns
Turn-On Rise Time	t _r			185	380	ns
Turn-Off Delay Time	t _{d(off)}			30	70	ns
Turn-Off Fall Time	t _f			90	190	ns
Total Gate Charge	Q _g				33	43
Gate-Source Charge	Q _{gs}	V _{DS} = -48 V, I _D = -27 A, V _{GS} = -10 V (Note4,5)		6.8		nC
Gate-Drain Charge	Q _{gd}			18		nC
Maximum Continuous Drain-Source Diode Forward Current	I _S				-27	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				-108	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -27 A			-4.0	V
Reverse Recovery Time	t _{rr}	V _{GS} = 0 V, I _S = -27 A,		105		ns
Reverse Recovery Charge	Q _{rr}	dI _F / dt = 100 A/μs (Note 4)		0.41		μC

Note:

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. L = 0.9mH, I_{AS} = -27A, V_{DD} = -25V, R_G = 25 Ω, Starting T_J = 25°C
3. I_{SD} ≤ -27A, di/dt ≤ 300A/μs, V_{DD} ≤ B_{VDS}, Starting T_J = 25°C
4. Pulse Test : Pulse width ≤ 300 μs, Duty cycle ≤ 2%
5. Essentially independent of operating temperature