

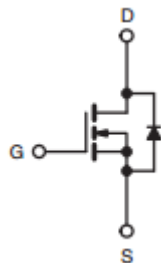
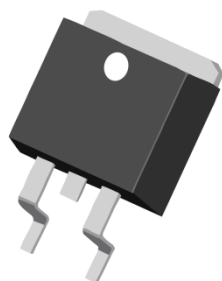
Description

This N-channel MOSFETS use advanced trench technology and design to provide excellent RDS(on) with low gate charge. It can be used in a wide variety of applications.

Features

BVDSS	RDS(on)	ID
400V	0.95Ω	6A

- 1) Low gate charge.
- 2) Green device available.
- 3) Advanced high cell density trench technology for ultra RDS(ON)
- 4) Excellent package for good heat dissipation.



TO-263

Absolute Maximum Ratings $T_c=25^{\circ}\text{C}$, unless otherwise noted

Symbol	Parameter	Ratings	Units
VDS	Drain-Source Voltage	400	V
VGS	Gate-Source Voltage	± 20	V
ID	Continuous Drain Current-1	5.5	A
	Continuous Drain Current- $T=100^{\circ}\text{C}$	3.5	
	Pulsed Drain Current ²	22	
EAS	Single Pulse Avalanche Energy ³	290	mJ
PD	Power Dissipation ⁴	74	W
TJ, TSTG	Operating and Storage Junction Temperature Range	-55 to +150	$^{\circ}\text{C}$

Thermal Characteristics

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Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance ,Junction to Case1	62	$^{\circ}\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	1.7	

Package Marking and Ordering Information

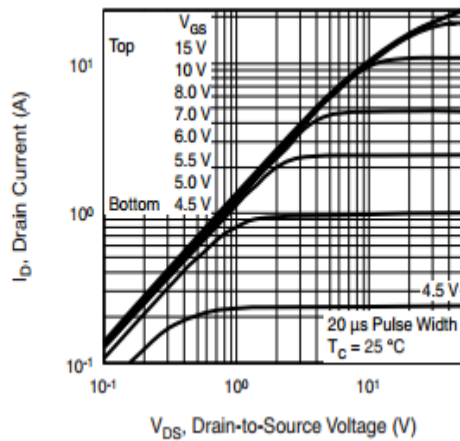
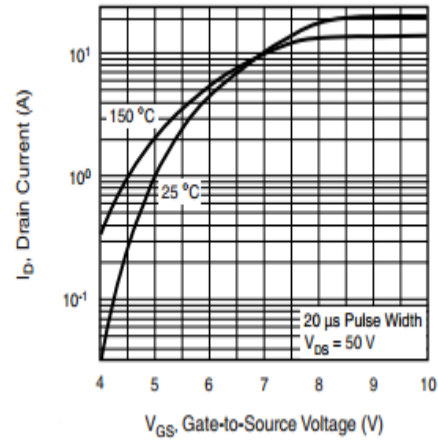
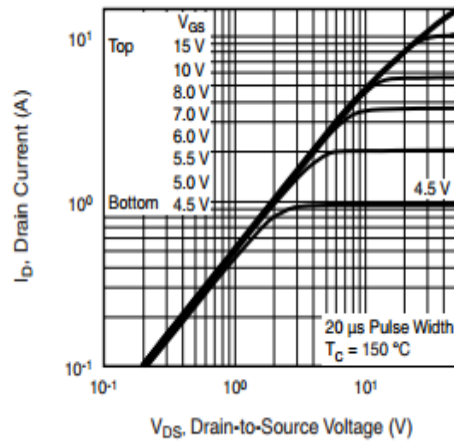
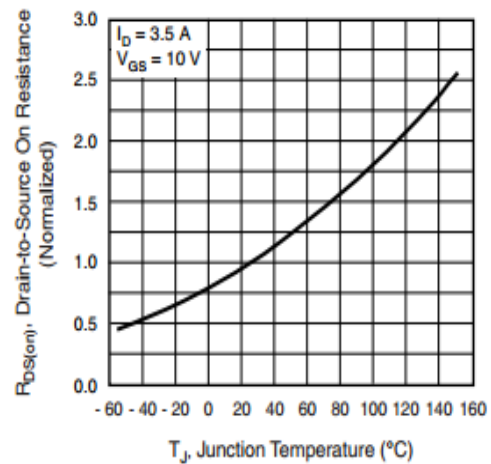
Part NO.	Marking	Package
KSMB730	KSMB730	TO-263

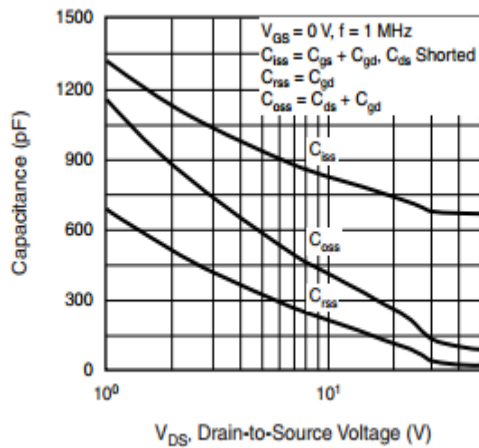
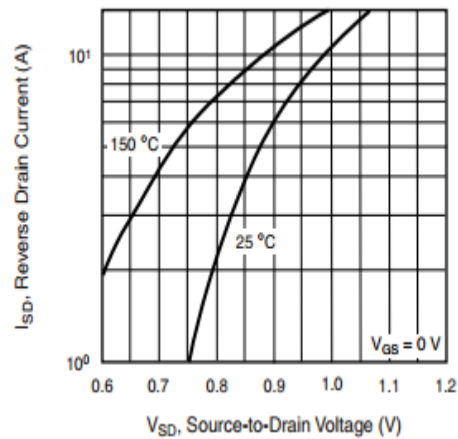
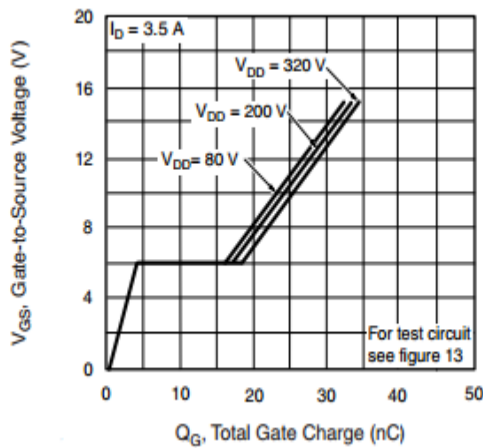
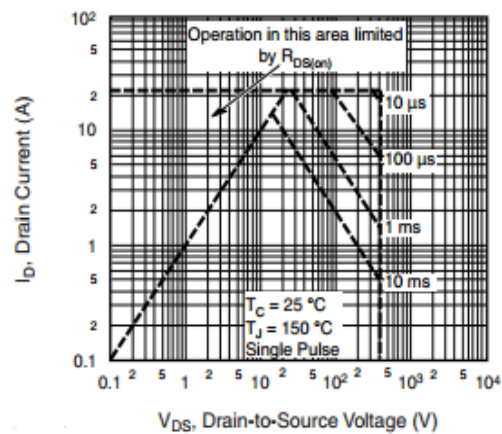
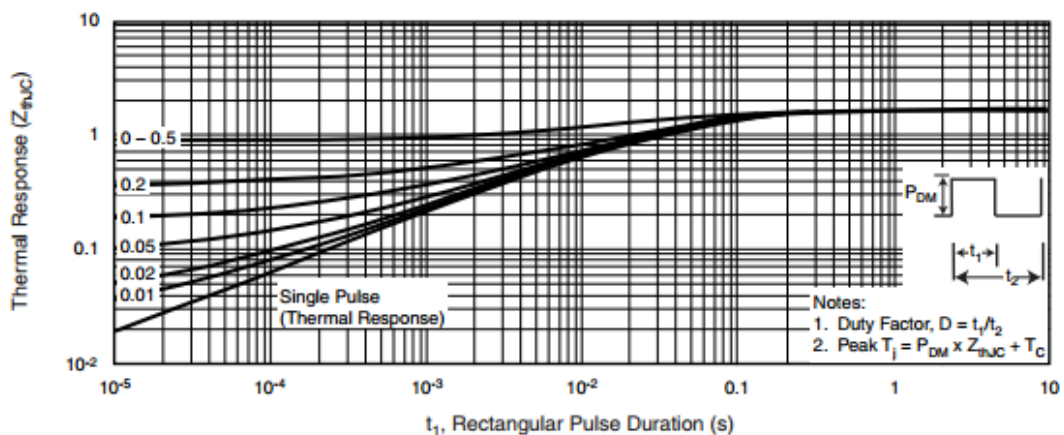
Electrical Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourctce Breakdown Voltage	V _{DS} =0V, I _D =250μA	400	—	—	v
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =0V, V _{DS} =32V	—	—	25	μA
I _{GSS}	Gate-Source Leakage Current	V _{DS} =±20V, V _{DS} =0A	—	—	±100	nA
On Characteristics						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{DS} =V _{DS} , I _D =250μA	2.0	—	4.0	V
R _{DS(ON)}	Drain-Source On Resistance ²	V _{DS} =10V, I _D =6A	—	—	0.95	Ω
		V _{DS} =2.5V, I _D =5A	—	—	—	
G _{FS}	Forward Transconductance	V _{DS} =5V, I _D =12A	2.9	—	—	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	—	700	—	pF
C _{OSS}	Output Capacitance		—	170	—	
C _{rss}	Reverse Transfer Capacitance		—	64	—	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =20V, V _{GS} =10V, R _{GEN} =3.3Ω	—	10	—	ns
t _r	Rise Time		—	15	—	ns
t _{d(off)}	Turn-Off Delay Time	V _{GS} =10V, R _{GEN} =3.3Ω	—	38	—	ns
t _f	Fall Time		—	14	—	ns
Q _g	Total Gate Charge	V _{GS} =4.5V, V _{DS} =20V, I _D =6A	—	—	38	nC
Q _{gs}	Gate-SourceCharge		—	—	5.7	nC
Q _{gd}	Gate-Drain “Miller” Charge		—	—	22	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode ForwardVoltage ²	V _{GS} =0V, I _S =1A	—	—	1.6	V
t _{rr}	Reverse Recovery Time	I _F =7A, di/dt=100A/μS	—	270	530	ns
Q _{rr}	Reverse Recovery Charge		—	1.8	2.2	nC

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Notes:

1. The data tested by surface mounted on a 1 inch² FR-4 board 2OZ copper.
2. The data tested by pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The EAS data shows Max. rating. The test condition is $V_{DD}=25V, V_{GS}=10V, L=0.1mH, i_{AS}=17.8A$
4. The power dissipation is limited by 150°C junction temperature.

Typical Characteristics $T_J=25^\circ C$ unless otherwise noted

**Fig. 1 Typical Output Characteristics,
TC = 25 °**

Fig. 2 Typical Transfer Characteristics

**Fig. 3 Typical Output Characteristics,
TC = 150 °C**

**Fig. 4 - Normalized On-Resistance vs.
Temperature**

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**Fig. 5 - Typical Capacitance vs.
Drain-to-Source Voltage**

**Fig. 6 - Typical Source-Drain
Diode Forward Voltage**

**Fig. 7 - Typical Gate Charge vs.
Gate-to-Source Voltage**

**Fig. 8 - Maximum Safe
Operating Area**

Fig. 9 - Maximum Effective Transient Thermal Impedance, Junction-to-Case