

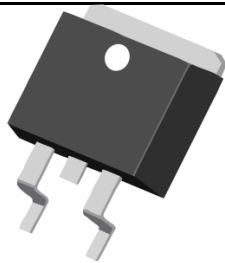
Description

This P-channel MOSFET s 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.

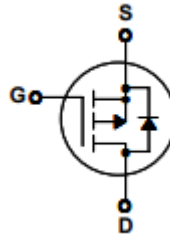
Features

BVDSS	RDS(ON)	ID
-60V	0.026Ω	-47A

- 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	Rated	Units
VDS	Drain-Source Voltage	-60	V
VGS	Gate-Source Voltage	±20	V
ID	Continuous Drain Current-1	-47	A
	Continuous Drain Current-T=100°C	-33.2	
	Pulsed Drain Current2	-188	
EAS	Single Pulse Avalanche Energy3	820	mJ
PD	Power Dissipation4	160	W
TJ, TSTG	Operating and Storage Junction Temperature Range	-55 to +175	°C

Thermal Characteristics

KERSEMI ELECTRONIC CO.,LTD.
-60V P-channel MOSFET

Symbol	Parameter	Ratings	Units
$R_{\theta JC}$	Thermal Resistance ,Junction to Case1	0.94	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient1	62.5	

Package Marking and Ordering Information

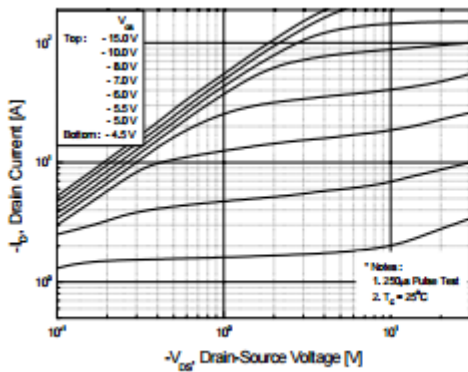
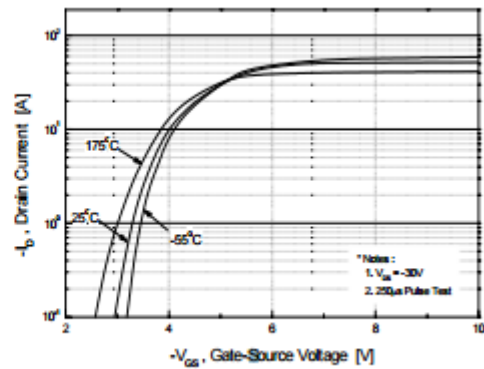
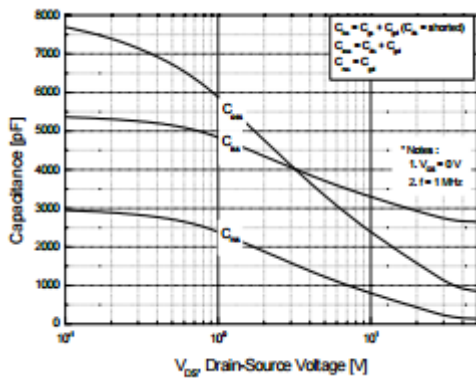
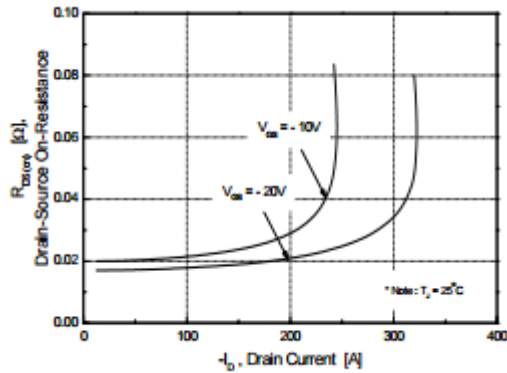
Part NO.	Marking	Package
KSMB47P06	KSMB47P06	TO-263

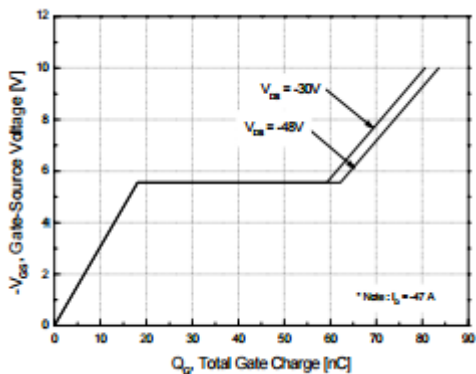
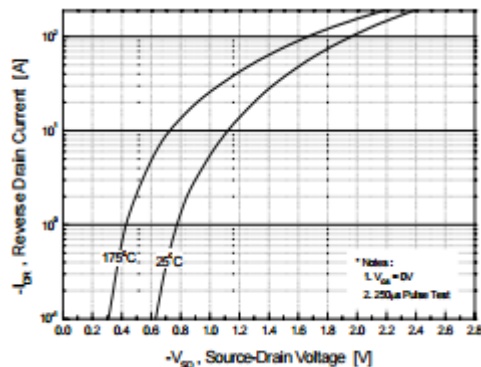
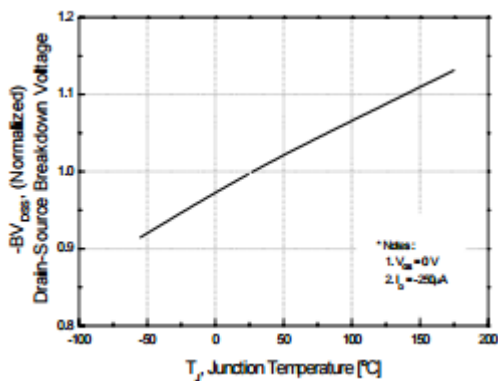
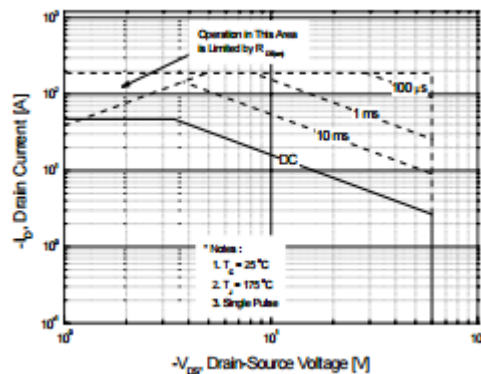
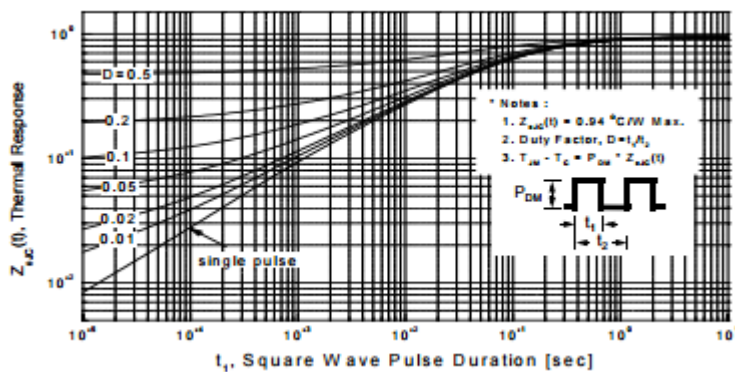
Electrical Characteristics $T_c=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	-60	—	—	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=32V$	—	—	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{DS}=\pm 20V, V_{GS}=0A$	—	—	± 100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	$V_{DS}=V_{DS}, I_D=250\mu A$	-2.0	—	-4.0	V
$R_{DS(on)}$	Drain-Source On Resistance ²	$V_{DS}=10V, I_D=6A$	—	0.021	0.026	Ω
		$V_{DS}=2.5V, I_D=5A$	—	—	—	---
G_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=12A$	—	21	—	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V,$ $f=1MHz$	—	2800	3600	pF
C_{oss}	Output Capacitance		—	1300	1700	
C_{rss}	Reverse Transfer Capacitance		—	320	420	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=20V,$ $V_{GS}=10V, R_{GEN}=3.3\Omega$	—	85	110	ns
t_r	Rise Time		—	450	910	ns
$t_{d(off)}$	Turn-Off Delay Time		—	100	210	ns
t_f	Fall Time		—	195	400	ns
Q_g	Total Gate Charge	$V_{GS}=4.5V, V_{DS}=20V,$ $I_D=6A$	—	84	110	nC
Q_{gs}	Gate-Source Charge		—	18	—	nC
Q_{gd}	Gate-Drain "Miller" Charge		—	44	—	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage ²	$V_{GS}=0V, I_S=1A$	—	—	-4.0	V
t_{rr}	Reverse Recovery Time	$I_F=7A, di/dt=100A/\mu S$	—	130	—	ns
Q_{rr}	Reverse Recovery Charge		—	0.55	—	nC

Notes:

1. The data tested by surface mounted on a 1 inch² FR-4 board 2OZ copper.
2. The data tested by pulse width≤300us,duty cycle≤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

Figure 1. On-Region Characteristics

Figure 2. Transfer Characteristics

Figure 3. Capacitance Characteristics

Figure 4. On-Resistance Variation vs. Drain Current and Gate Voltage


Figure 5. Gate Charge Characteristics

Figure 6. Body Diode Forward Voltage Variation vs. Source Current and Temperature

Figure 7. Breakdown Voltage Variation vs. Temperature

Figure 8. Maximum Safe Operating Area

Figure 9. Transient Thermal Response Curve