

N-Channel 30V(D-S) MOSFET, ESD Protected

GENERAL DESCRIPTION

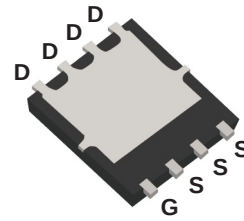
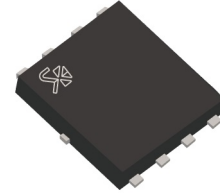
The SKQ90N03AD is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance.

FEATURES

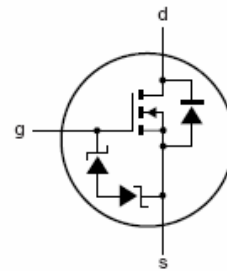
- $R_{DS(ON)} \leq 4.8m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 9m\Omega @ V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- ESD protected : 2000V

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC



PDFN5060



Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)

Parameter	Symbol	Maximum Ratings	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V

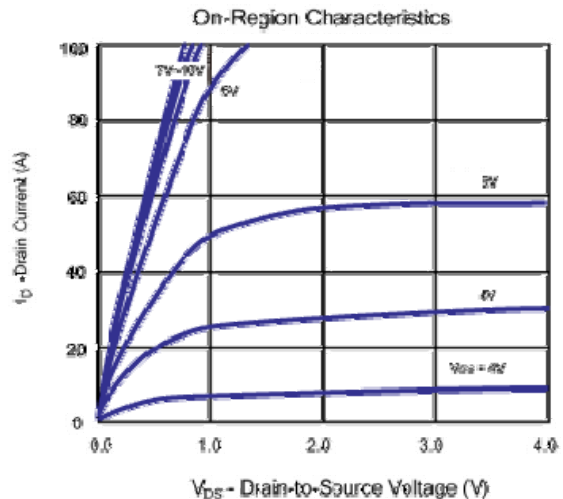
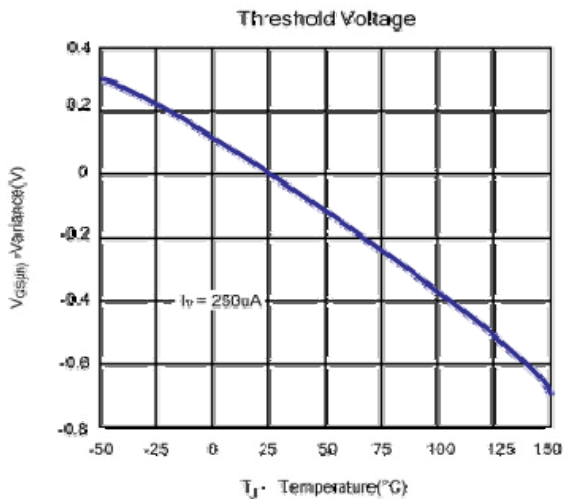
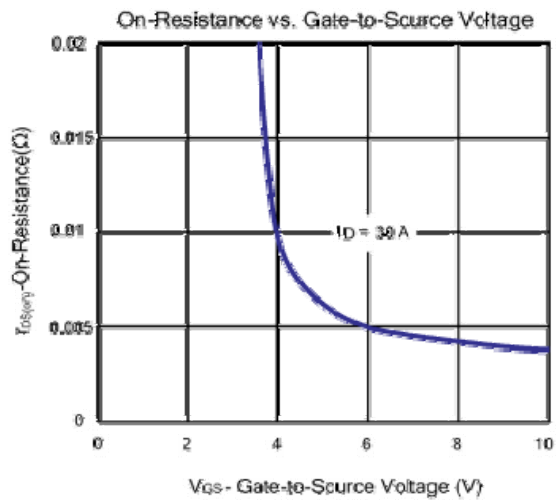
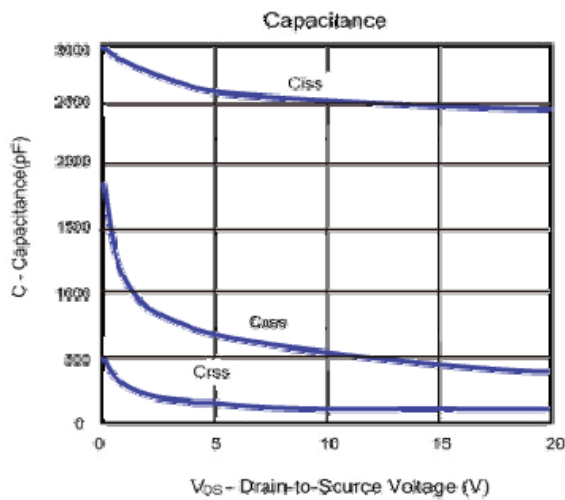
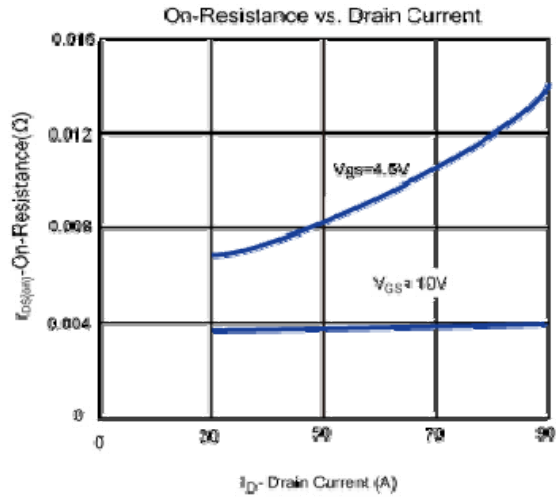
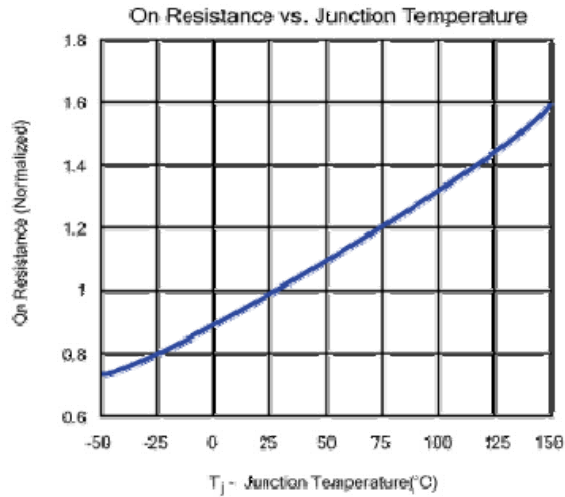
Electrical Characteristics (T_j = 25°C Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250 μ A	1.2		3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = $\pm$ 16V			$\pm$ 10	μ A
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V			1	μ A
R _{DS(ON)}	Drain-Source On-State Resistance ^a	V _{GS} =10V, I _D = 30A		4	4.8	m Ω
		V _{GS} =4.5V, I _D = 15A		7	9	
V _{SD}	Diode Forward Voltage	I _S =2.7A, V _{GS} =0V		0.8	1.2	V
DYNAMIC						
Q _g	Total Gate Charge(10V)	V _{DS} =15V, V _{GS} =10V, I _D =17A		53		nC
Q _g	Total Gate Charge(4.5V)	V _{DS} =15V, V _{GS} =4.5V, I _D =17A		27		
Q _{gs}	Gate-Source Charge			11		
Q _{gd}	Gate-Drain Charge			14		
C _{iss}	Input capacitance	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		2400		pF
C _{oss}	Output Capacitance			350		
C _{rss}	Reverse Transfer Capacitance			110		
t _{d(on)}	Turn-On Delay Time	V _{DD} =15V, R _L =15 Ω I _D =1A, V _{GEN} =10V R _G =6 Ω		23		ns
t _r	Turn-On Rise Time			17		
t _{d(off)}	Turn-Off Delay Time			76		
t _f	Turn-Off Fall Time			15		

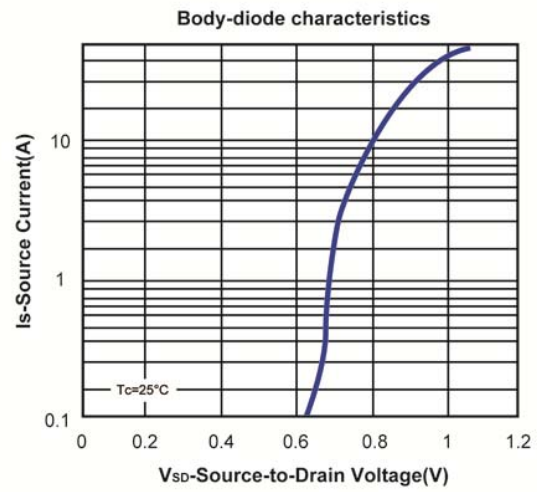
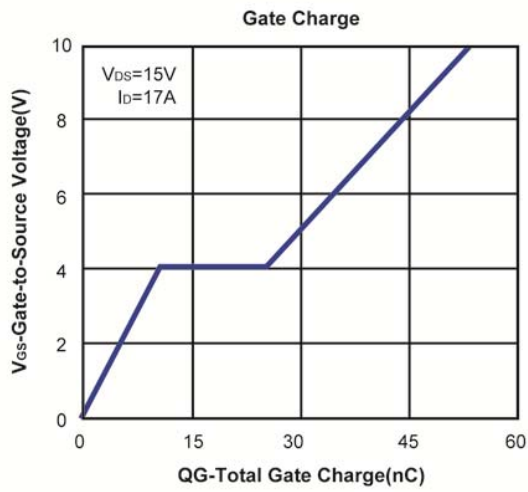
Notes: a. Based on epoxy or solder paste and bond wire Al 12mil $\times$ 2(S), Au or Cu 1.5mil $\times$ 1(G)

b. Pulse test; pulse width $\leq$ 300us, duty cycle $\leq$ 2%.

Typical Characteristics (T_J = 25°C Noted)

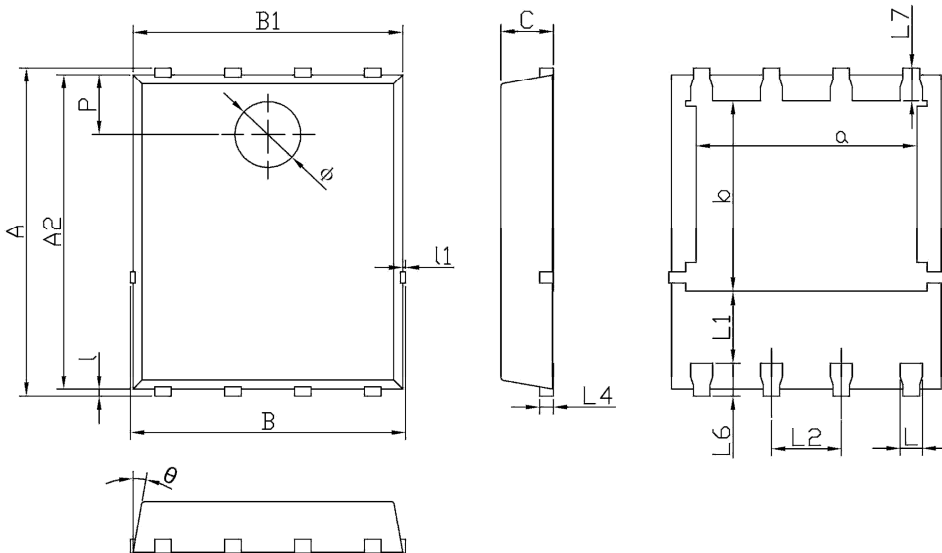


Typical Characteristics (T_J =25°C Noted)



PDFN5060

Unit:mm



Dimensions In Millimeter			
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
a	3.91	4.01	4.11
A2	5.70	5.75	5.80
B	4.90	5.00	5.10
b	3.37	3.47	3.57
B1	4.80	4.90	5.00
C	0.90	0.95	1.00
L	0.35	0.40	0.45
l	0.06	0.13	0.20
L1	1.10	-	-
l1	-	-	0.10
L2	1.17	1.27	1.37
L4	0.21	0.26	0.34
L6	0.51	0.61	0.71
L7	0.51	0.61	0.71
P	1.00	1.10	1.20
θ	8°	10°	12°
φ	1.10	1.20	1.30