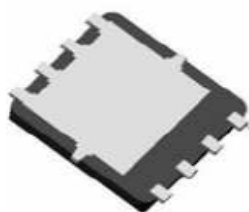
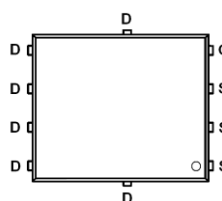
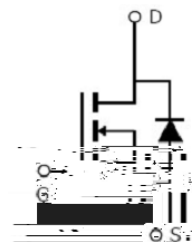


Main Product Characteristics:

V_{DSS}	30V
$R_{DS(on)}$	6.7m (typ.)
I_D	25A


PQFN 5x6-8L

Pin Assignments

Schematic Diagram
Features and Benefits:

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150 operating temperature


Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute Max Rating:

Symbol	Parameter	Max.	Units
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	25	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	17	
I_{DM}	Pulsed Drain Current	50	
$P_D @ T_C = 25^\circ C$	Power Dissipation	30	W
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-to-Source Voltage	± 20	V
E_{AS}	Single Pulse Avalanche Energy @ $L=0.5mH$	68	mJ
$T_J \quad T_{STG}$	Operating Junction and Storage Temperature Range	-55 to + 150	$^\circ C$



Thermal Resistance

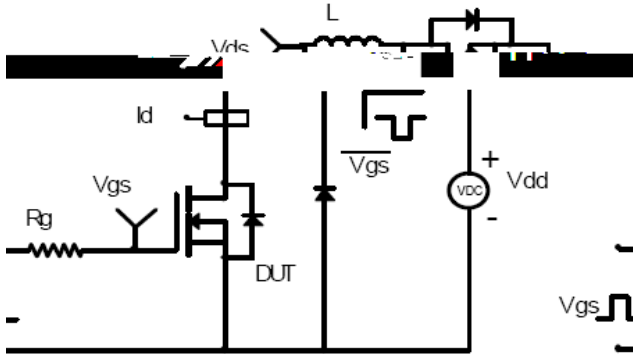
Symbol	Characteristics	Typ.	Max.	Units
R	Junction-to-case		4.2	/W

Electrical Characteristics @T_A=25 unless otherwise specified = 0V

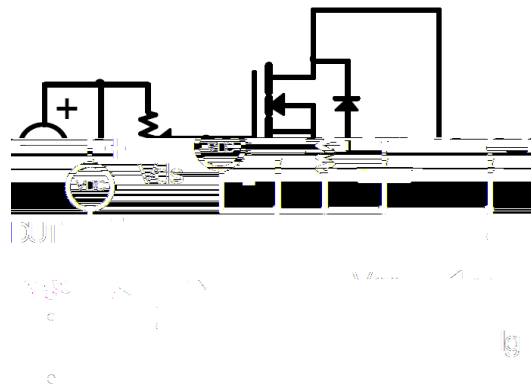
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	30			V	V _{GS} = 0V, I _D
R _{DS(on)}	Static Drain-to-Source on-resistance		6.7	10		V _{GS} =10V, I _D = 15A
			12	16		V _{GS} =4.5V, I _D = 10A
V _{GS(th)}	Gate threshold voltage	1.0		2.5	V	V _{DS} = V _{GS} , I _D
I _{DSS}	Drain-to-Source leakage current			1		V _{DS} = 30V, V _{GS} = 0V
I _{GSS}	Gate-to-Source forward leakage			100	nA	V _{GS} = 20V
				-100		V _{GS} = -20V
Q _g	Total gate charge		12		nC	I _D = 15A, V _{DS} =15V, V _{GS} = 10V
Q _{gs}	Gate-to-Source charge		3			
Q _{gd}	Gate-to-Drain("Miller") charge		4			
t _{d(on)}	Turn-on delay time		8.3		ns	V _{GS} =10V, V _{DS} =22V, R _{GEN} =2.2 I _D =10A
t _r	Rise time		19.3			
t _{d(off)}	Turn-Off delay time		23.1			
t _f	Fall time		5.5			
C _{iss}	Input capacitance		960			V _{GS} = 0V
C _{oss}	Output capacitance		144		pF	V _{DS} = 25V 1MHz

Test Circuits and Waveforms

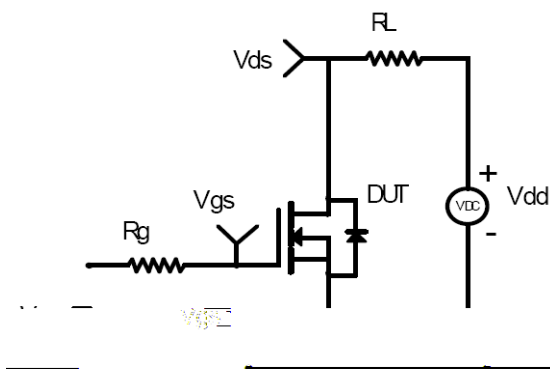
EAS Test Circuit



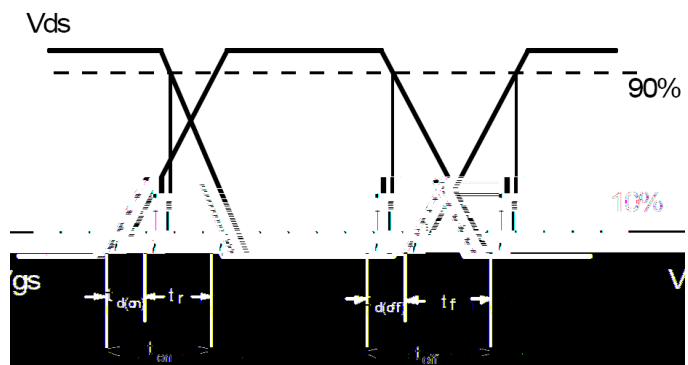
Gate Charge Test Circuit



Switching Time Test Circuit



Switching Waveforms



Notes:

Continuous current tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

Repetitiv.122 0.1z424 B016y 6(1)-4(dt)4(h0.1zl)6(i)6(m)-7(i)-4(t)5(e.122d)4(by)11()5(m)-7(ax.)4()5(j)-4(u)11(nct max. junction temperture, using junction-to-case thermal

421Besistance

Typical Electrical and Thermal Characteristics

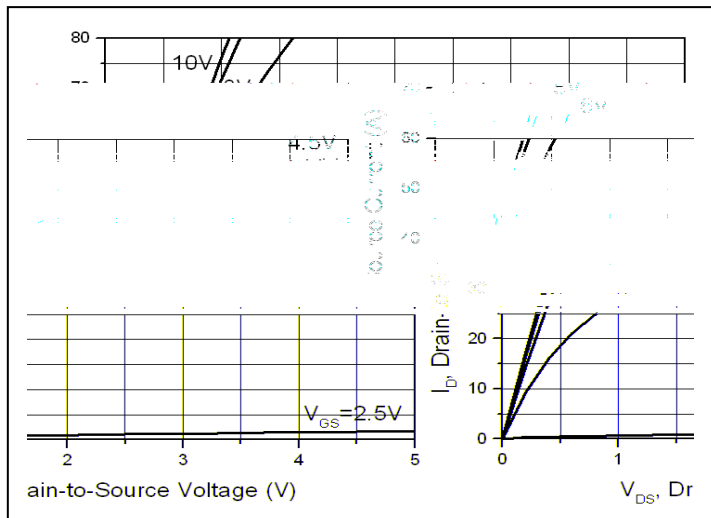


Figure 1. Typical Output Characteristics

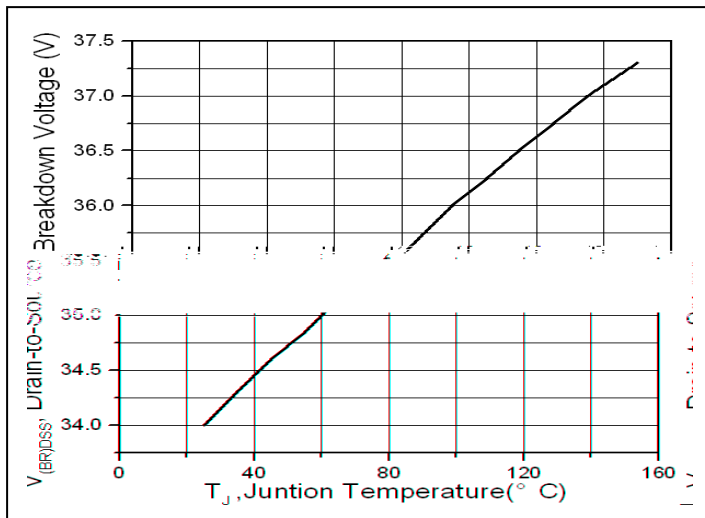


Figure 2. BVDSS vs. Junction Temperature

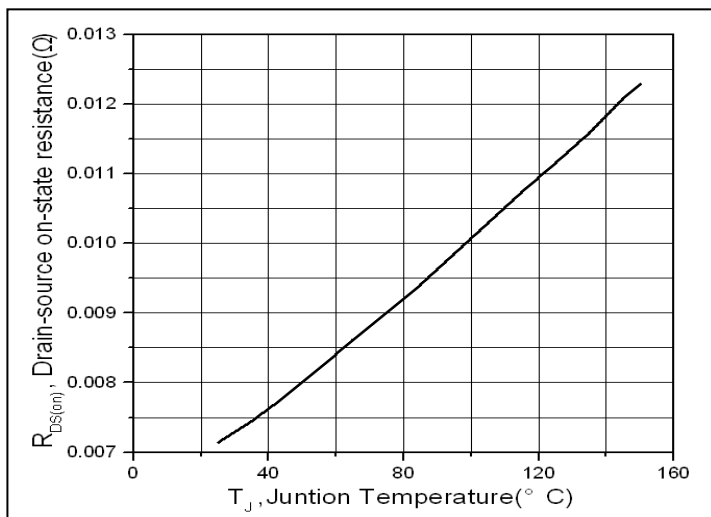


Figure 3. Normalized On-Resistance vs. Junction Temperature

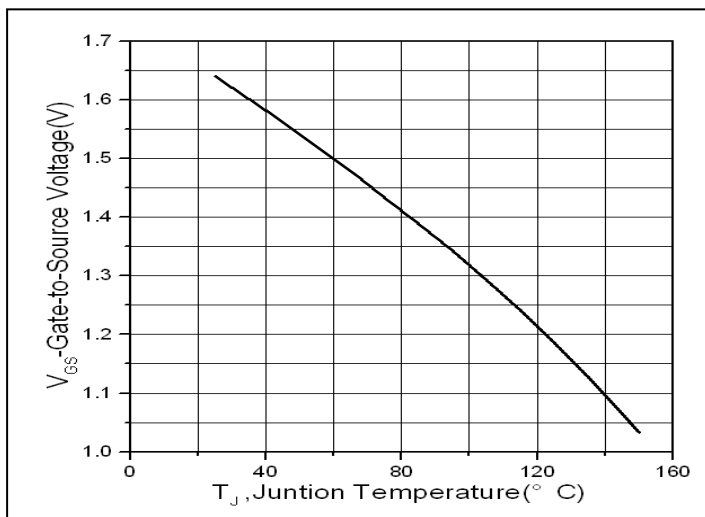


Figure 4. Normalized $V_{GS(th)}$ vs. Junction Temperature

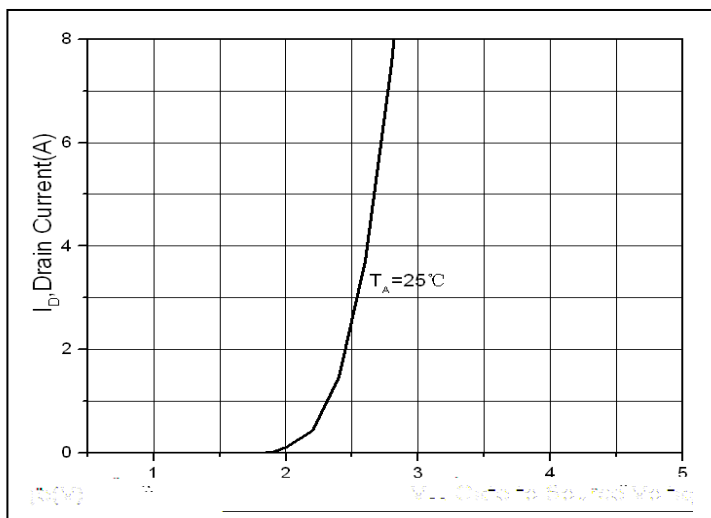


Figure 5. Transfer Characteristics

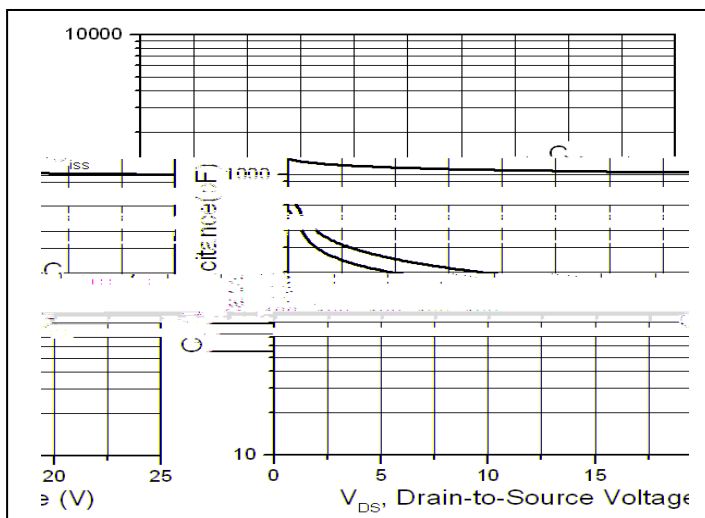


Figure 6. Capacitance Characteristics

Typical Electrical and Thermal Characteristics

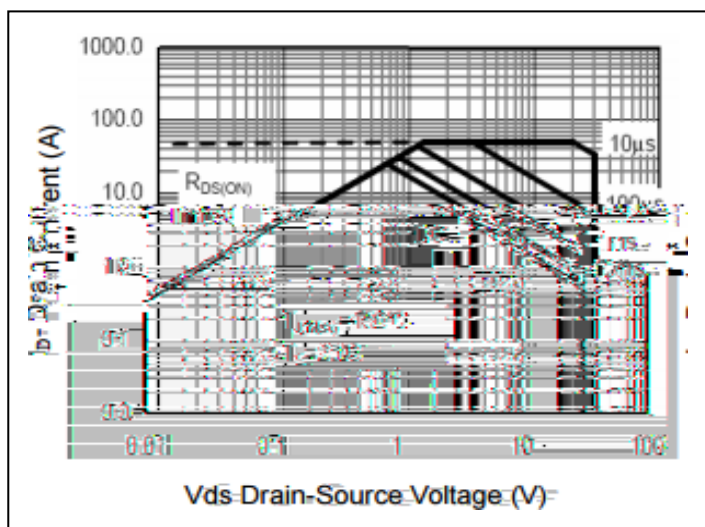


Figure 7. Safe Operation Area

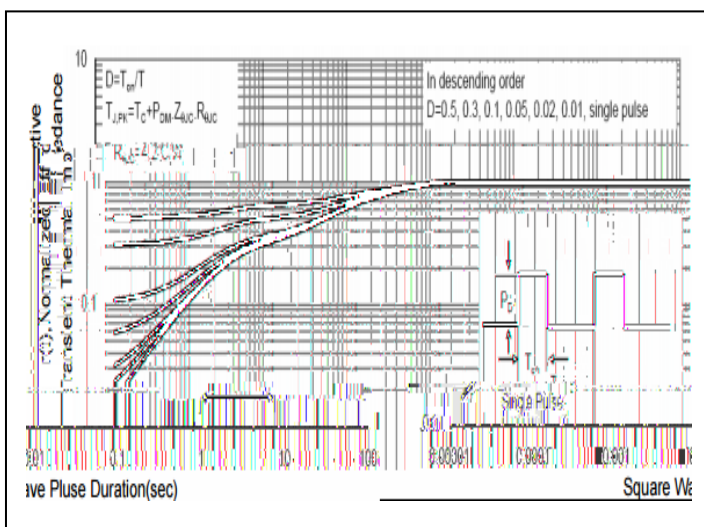
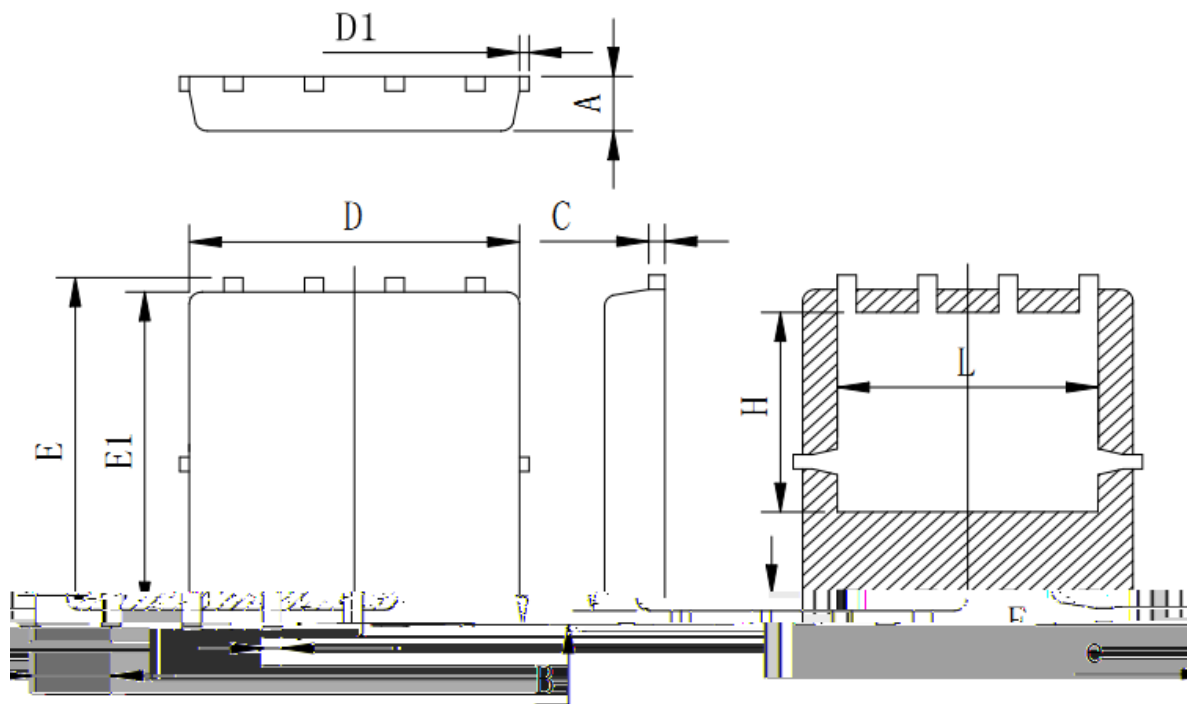


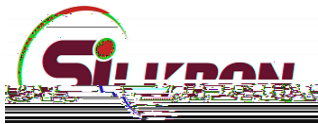
Figure 8. Transient Thermal Impedance

Mechanical Data

PDFN5*6 Package Outline (Unit:mm)



Symbol	Min	Typ	Max
A	0.00	0.05	0.10
D1	0.68		0.18
C	0.30		0.20
D	5.20	5.40	5.60
D1	0.15		0.15
E	6.05	6.20	6.35
E1	5.55	5.70	5.85
e	1.27	1.32	1.37
F	0.30	0.35	0.40
H	3.47	3.67	3.87
L	4.00	4.20	4.40



ATTENTION:

Any and all Silikron products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-