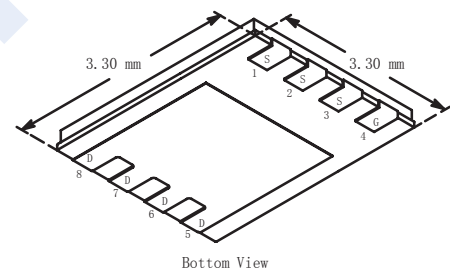
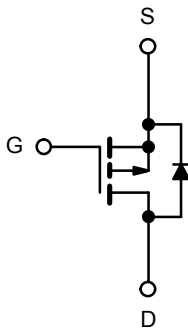


## P-Channel MOSFET

### SI7119DN (KI7119DN)

#### ■ Features

- $V_{DS} (V) = -200V$
- $I_D = -3.8 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 1.05 \Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 1.1 \Omega (V_{GS} = -6V)$



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	-200	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_C = 25^\circ C$	A	
		$T_C = 70^\circ C$		
		$T_a = 25^\circ C$		
		$T_a = 70^\circ C$		
Pulsed Drain Current	$I_{DM}$	-5		
Avalanche Current	$I_{AS}$	5		
Single-Pulse Avalanche Energy	$E_{AS}$	1.25	mJ	
Power Dissipation	$P_D$	$T_C = 25^\circ C$	W	
		$T_C = 70^\circ C$		
		$T_a = 25^\circ C$		
		$T_a = 70^\circ C$		
Thermal Resistance.Junction- to-Ambient	$t \leq 10 s$	$R_{thJA}$	35	$^\circ C/W$
Thermal Resistance.Junction- to-Case	Steady State	$R_{thJC}$	3.8	
Junction Temperature	$T_J$	150	$^\circ C$	
Junction Storage Temperature Range	$T_{stg}$	-55 to 150		

## P-Channel MOSFET

### SI7119DN (KI7119DN)

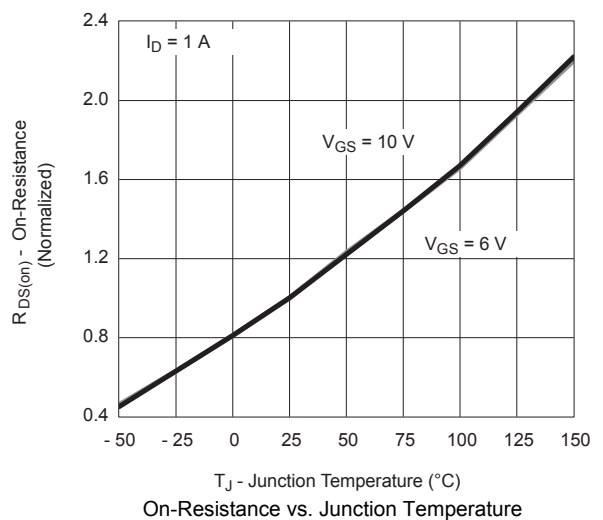
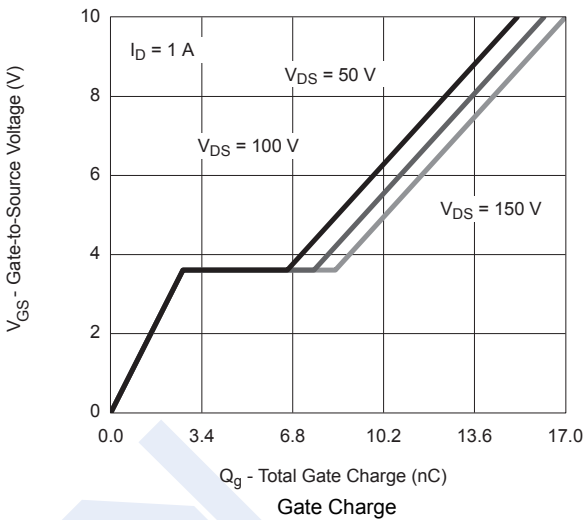
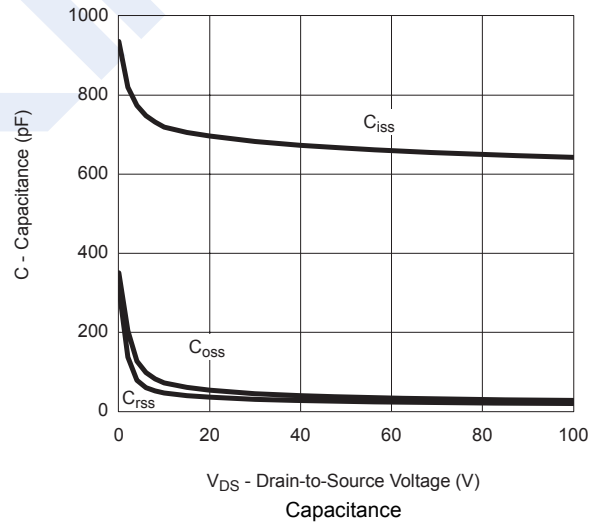
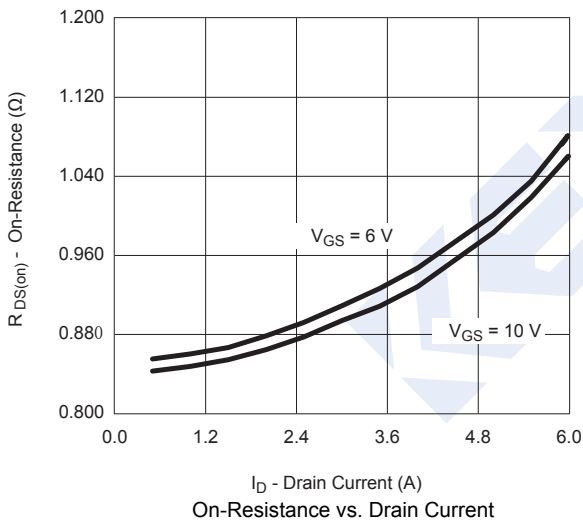
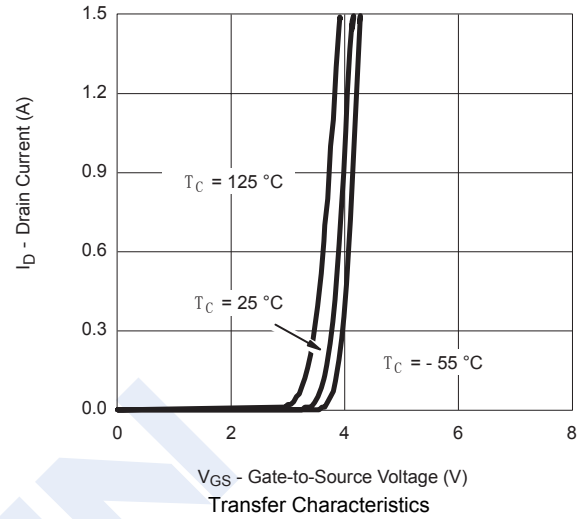
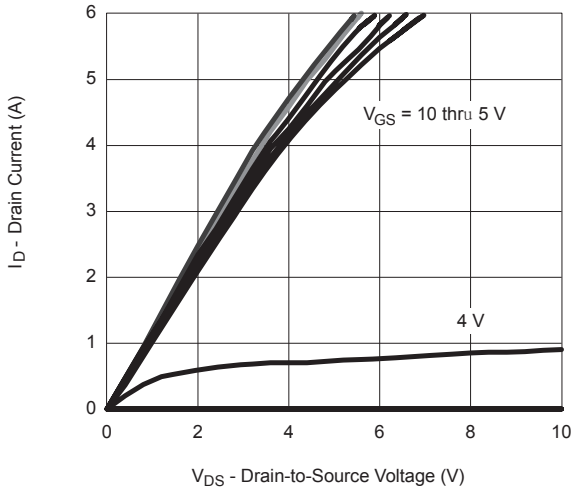
#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-200			V	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-200V, V <sub>GS</sub> =0V			-1	μA	
		V <sub>DS</sub> =-200V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-10		
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA	
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-2		-4	V	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-1A			1.05	Ω	
		V <sub>GS</sub> =-6V, I <sub>D</sub> =-1A			1.1		
On state drain current	I <sub>D(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-10V	-3			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-1A		4		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-50V, f=1MHz		666		pF	
Output Capacitance	C <sub>oss</sub>			36			
Reverse Transfer Capacitance	C <sub>rss</sub>			25			
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		5.3	8	Ω	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-100V, I <sub>D</sub> =-1A		16.2	25	nC	
				10.6	16		
Gate Source Charge	Q <sub>gs</sub>	V <sub>GS</sub> =-6V, V <sub>DS</sub> =-100V, I <sub>D</sub> =-1A		2.5			
Gate Drain Charge	Q <sub>gd</sub>			4.9			
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> = - 100 V, R <sub>L</sub> = 100 Ω I <sub>D</sub> ≅ - 1 A, V <sub>GEN</sub> = - 6 V, R <sub>g</sub> = 1 Ω		16	25	ns	
Turn-On Rise Time	t <sub>r</sub>			16	25		
Turn-Off DelayTime	t <sub>d(off)</sub>			25	40		
Turn-Off Fall Time	t <sub>f</sub>			16	25		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> = - 100 V, R <sub>L</sub> = 100 Ω I <sub>D</sub> ≅ - 1 A, V <sub>GEN</sub> = - 10 V, R <sub>g</sub> = 1 Ω		9	15	ns	
					11		18
					27		42
					12		20
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-4A, di/dt=100A/us, T <sub>J</sub> =25°C		66	90	nC	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			215	270		
Reverse Recovery Fall Time	t <sub>a</sub>			48			ns
Reverse Recovery Rise Time	t <sub>b</sub>			18			
Maximum Body-Diode Continuous Current	I <sub>S</sub>	T <sub>C</sub> =25°C			-5	A	
Pulse Diode Forward Current	I <sub>SM</sub>				-5		
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1.2	V	

Note : Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.

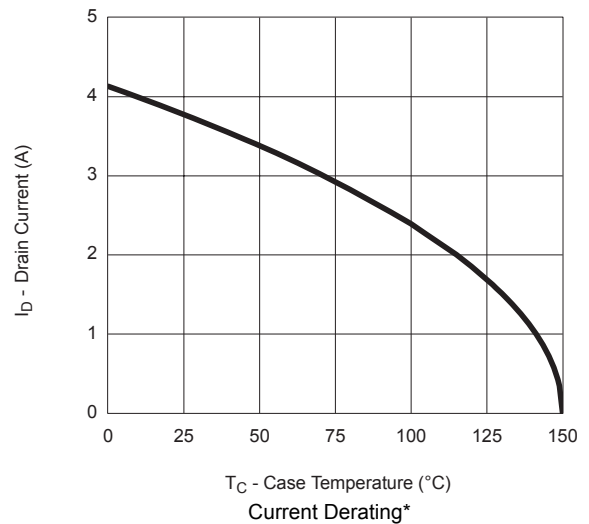
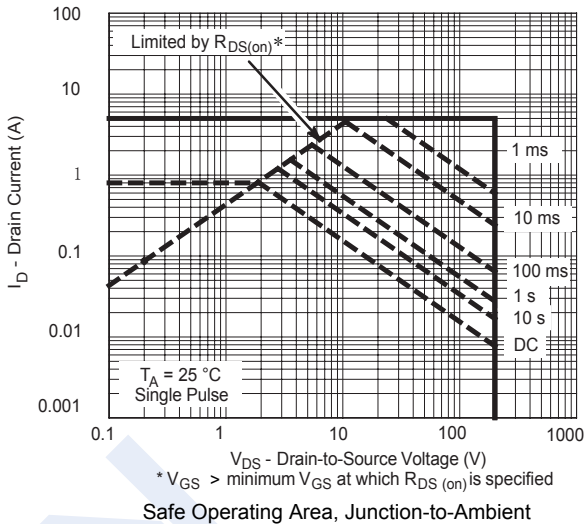
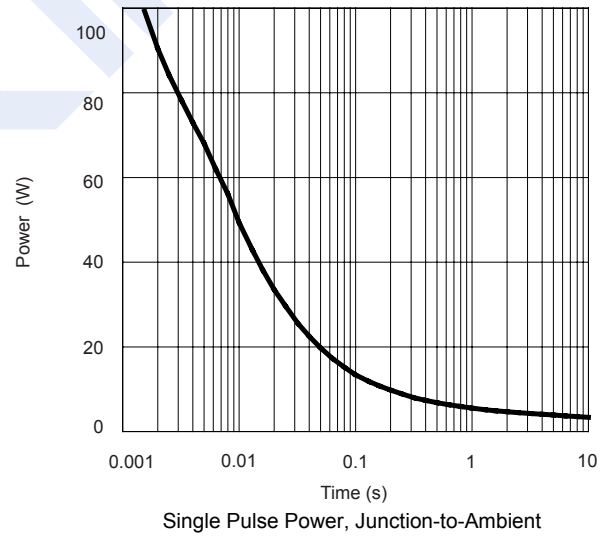
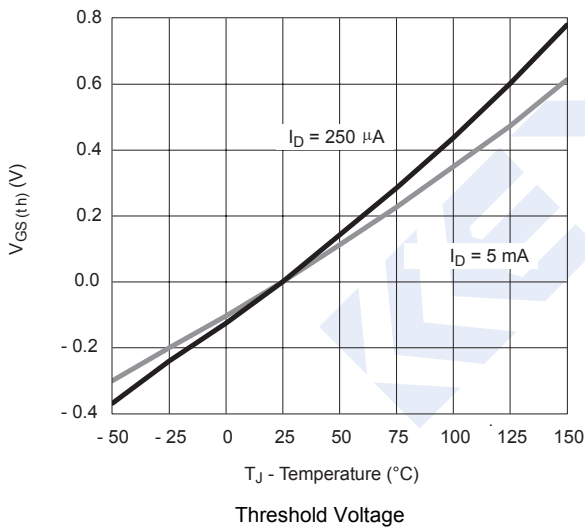
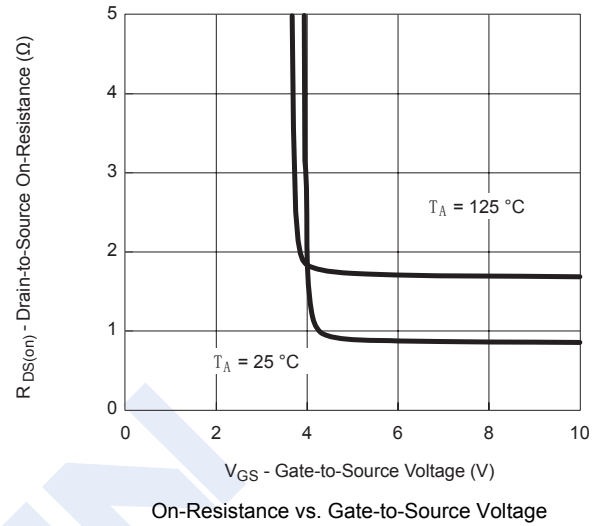
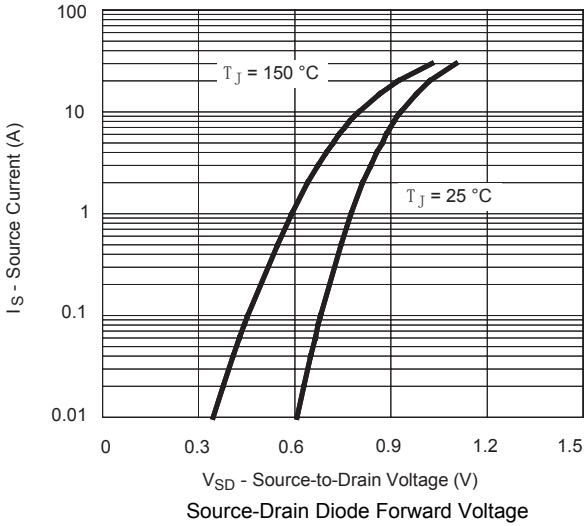
## P-Channel MOSFET SI7119DN (KI7119DN)

### Typical Characteristics



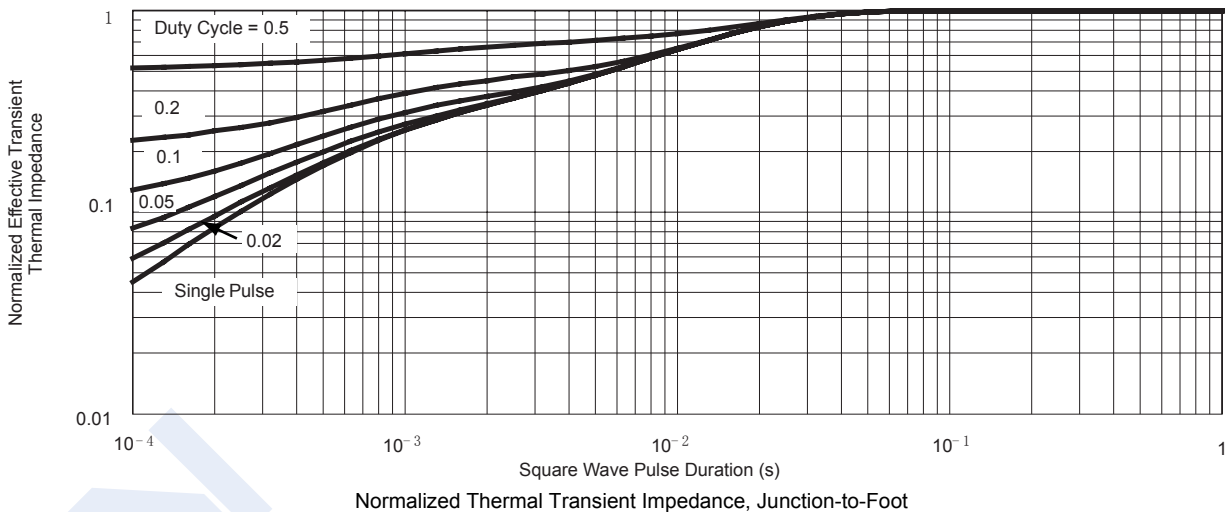
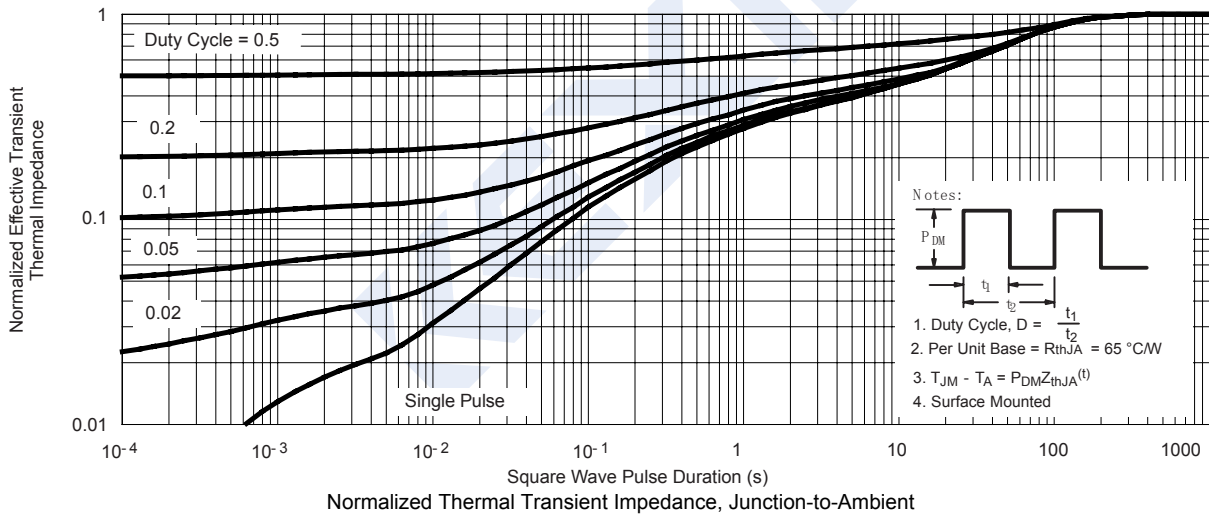
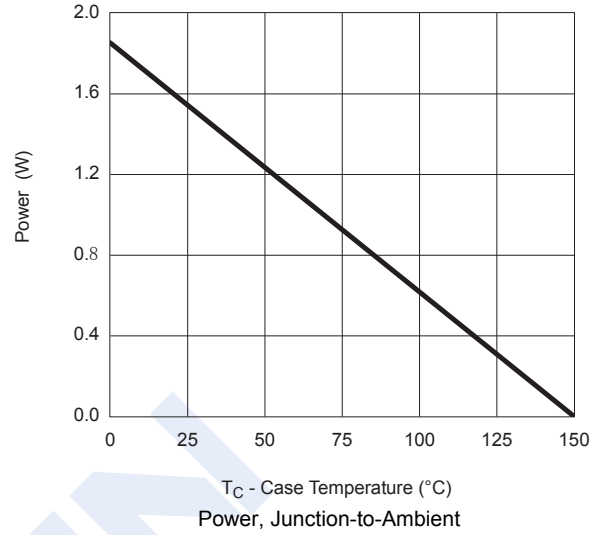
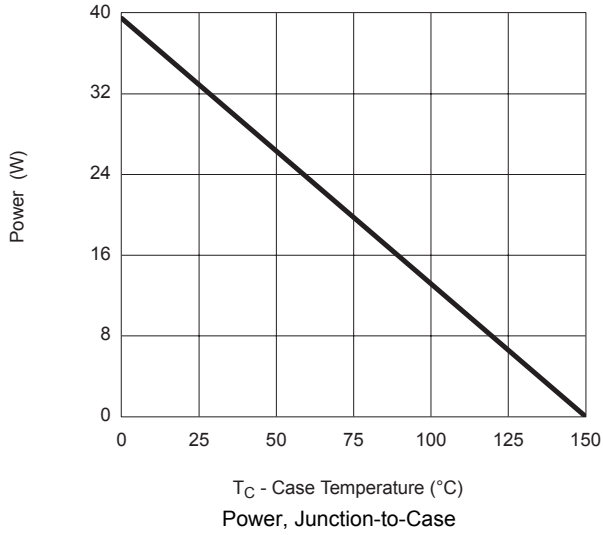
## P-Channel MOSFET SI7119DN (KI7119DN)

### Typical Characteristics



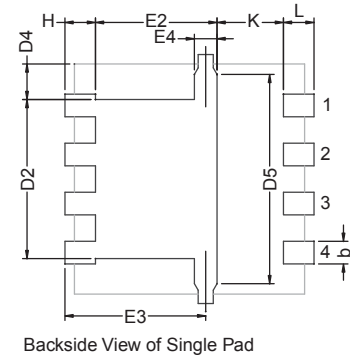
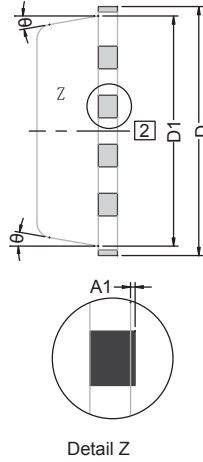
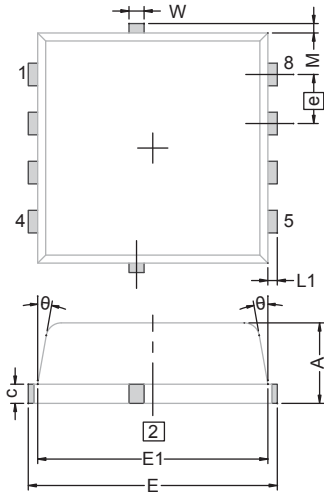
## P-Channel MOSFET SI7119DN (KI7119DN)

### Typical Characteristics

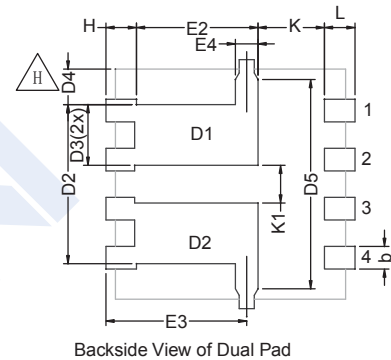


Dimensional Outline and Pad Lay-out

PowerPAK 1212-8 (QFN5X6)



Backside View of Single Pad



Backside View of Dual Pad

Notes:

- 1. Inch will govern
- 2. Dimensions exclusive of mold gate burrs
- 3. Dimensions exclusive of mold flash and cutting burrs

DIM.	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.79	1.12	0.031	0.044
A1	0	0.05	0	0.002
b	0.23	0.41	0.009	0.016
c	0.13	0.33	0.005	0.013
D	3.00	3.61	0.118	0.142
D1	2.95	3.21	0.116	0.126
D2	1.98	2.70	0.078	0.106
D4	0.31 TYP.		0.012 TYP.	
E	3.00	3.61	0.118	0.142
E1	2.95	3.21	0.116	0.126
E2	1.47	2.21	0.058	0.087
E3	1.75	1.98	0.069	0.078
E4	0.535 TYP.		0.021 TYP.	
e	0.65 BSC		0.026 BSC	
K	0.61		0.024	
K1	0.35		0.014	
H	0.15	0.51	0.006	0.020
L	0.15	0.56	0.006	0.022
L1	0.051	0.204	0.002	0.008
theta	0°	12°	0°	12°
W	0.15	0.36	0.006	0.014
M	0.125 TYP.		0.005 TYP.	