

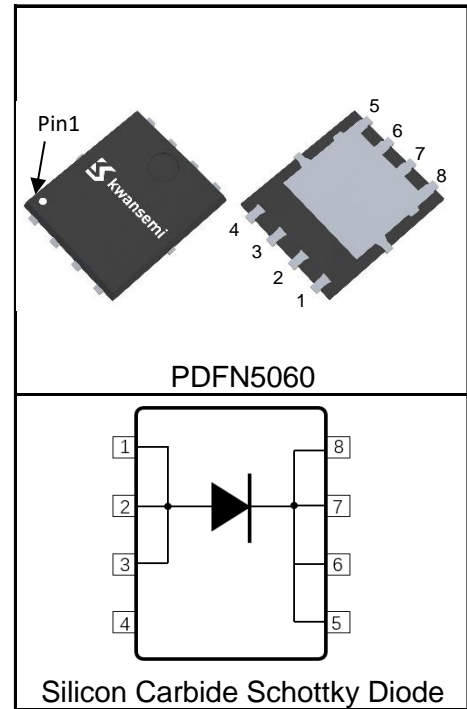
## Features

- $V_{RRM} = 650V$   
 $I_F = 6A$
- wattSiC<sup>®</sup> Technology
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- High Surge Current Capability
- Optimized for High Temperature Operation

## Applications

- Switch Mode Power Supply
- Power Factor Correction
- Solar Inverter

## Pin Description



## Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
<b>Common Ratings</b> ( $T_A = 25^\circ C$ Unless Otherwise Noted)			
$V_{RRM}$	Maximum Repetitive Reverse Voltage	650	V
$V_{RSM}$	Maximum Surge Reverse Voltage	650	V
$V_{DC}$	DC Blocking Voltage	650	V
$I_F$	Continuous Forward Current	$T_C = 25^\circ C$	30 A
		$T_C = 125^\circ C$	16 A
		$T_C = 150^\circ C$	6 A
$I_{FRM}$	Repetitive Peak Forward Surge Current @ $T_C = 25^\circ C, t_p = 10$ ms, Half Sine Wave	40	A
$I_{FSM}$	Non-repetitive Peak Forward Surge Current @ $T_C = 25^\circ C, t_p = 10$ ms, Half Sine Wave	80	A
$I_{Fmax}$	Non-repetitive Peak Forward Surge Current @ $T_C = 25^\circ C, t_p = 10$ $\mu s$ , Pulse	520	A
$P_{tot}$	Power Dissipation	150	W
$T_{STG}$	Storage Temperature Range	-55 to 175	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 175	$^\circ C$
<b>Mounted on Large Heat Sink</b>			
$R_{\theta JC}$	Thermal Resistance-Junction to Case	1	$^\circ C/W$
$R_{\theta JA}^{\circ}$	Thermal Resistance-Junction to Ambient	30	$^\circ C/W$

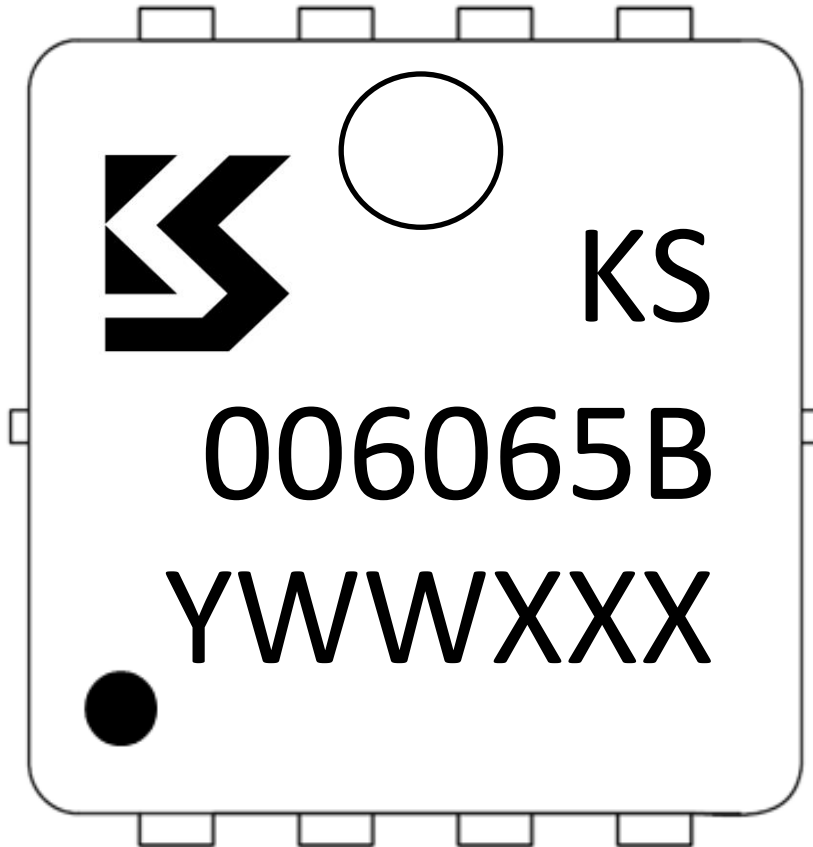
**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS006D065NAB1			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
$V_F$	Forward Voltage	$I_F=6\text{A}, T_C=25^\circ\text{C}$		1.4	1.7	V
		$I_F=6\text{A}, T_C=175^\circ\text{C}$		1.6	2.0	V
$I_R$	Reverse Leakage Current	$V_R=650\text{V}, T_C=25^\circ\text{C}$		1	30	$\mu\text{A}$
		$V_R=650\text{V}, T_C=175^\circ\text{C}$		30	250	$\mu\text{A}$
<b>AC Characteristics</b>						
$Q_C$	Total Capacitive Charge	$V_R = 400\text{V}$ $T_J = 25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V) dV$		12		nC
C	Total Capacitance	$V_R = 0\text{V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$		350		pF
		$V_R = 200\text{V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$		34		pF
		$V_R = 400\text{V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$		29		pF
$E_C$	Capacitance Stored Energy	$V_R = 400\text{V}$		4.6		$\mu\text{J}$

Notes: ① Polymide PCB, 2oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm.

**Ordering and Marking Information**

Device	Package	Packaging	Quantity	Reel Size	Tape width
KS006D065NAB1	PDFN5060	Tape&Reel	5000	13"	12mm

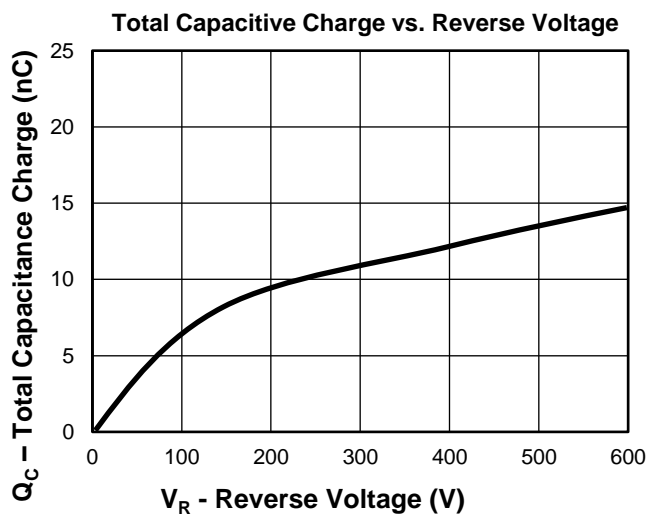
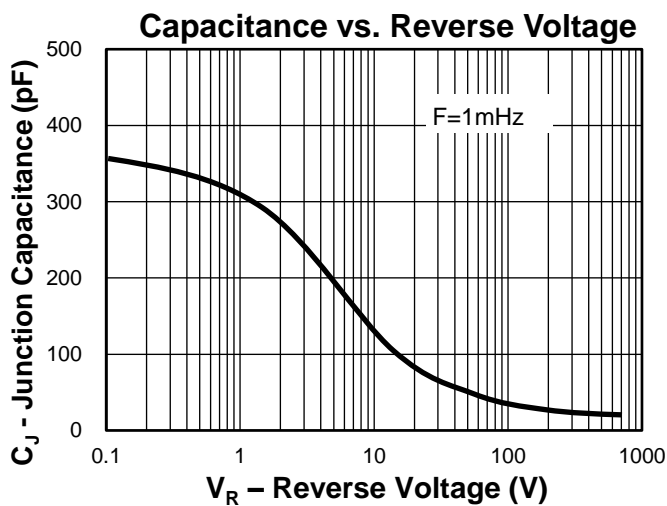
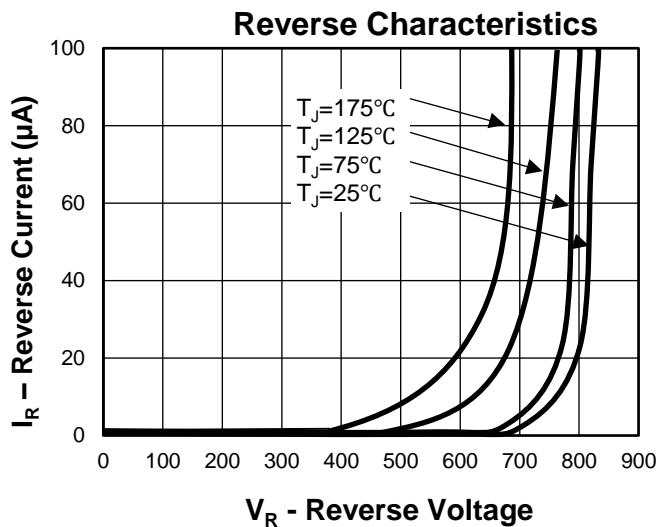
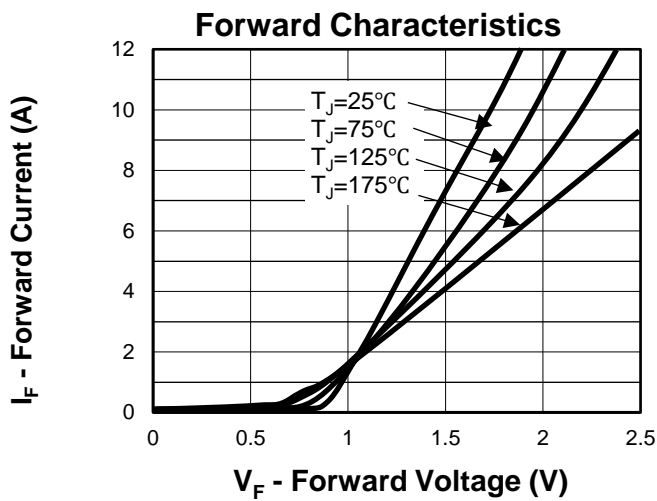
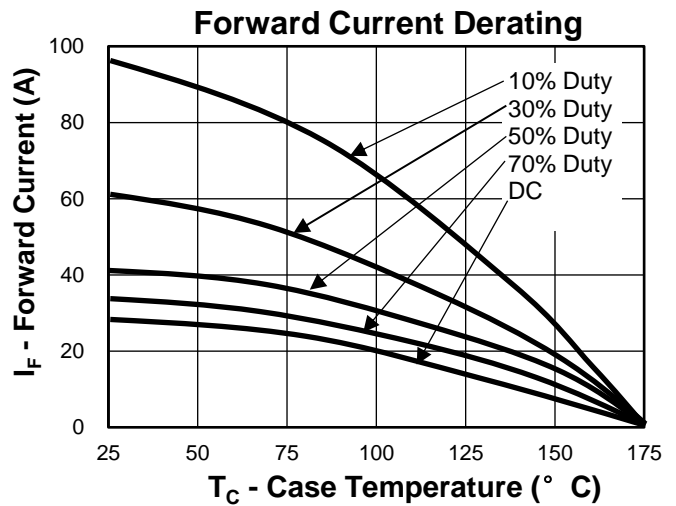
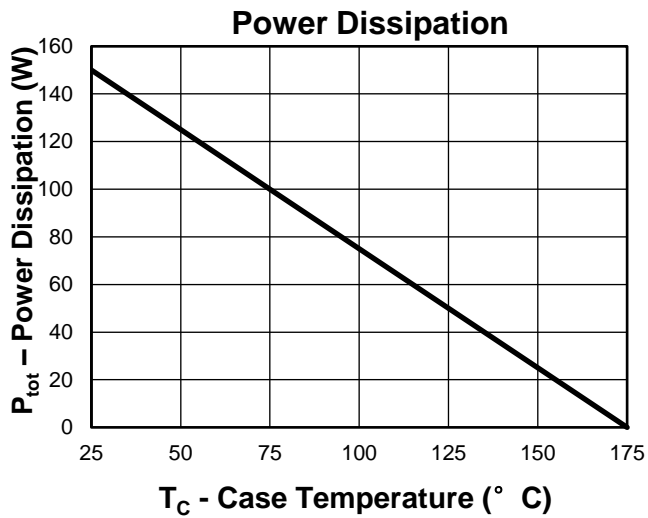


1st Line: Kwansemi LOGO, Kwansemi Code(KS)

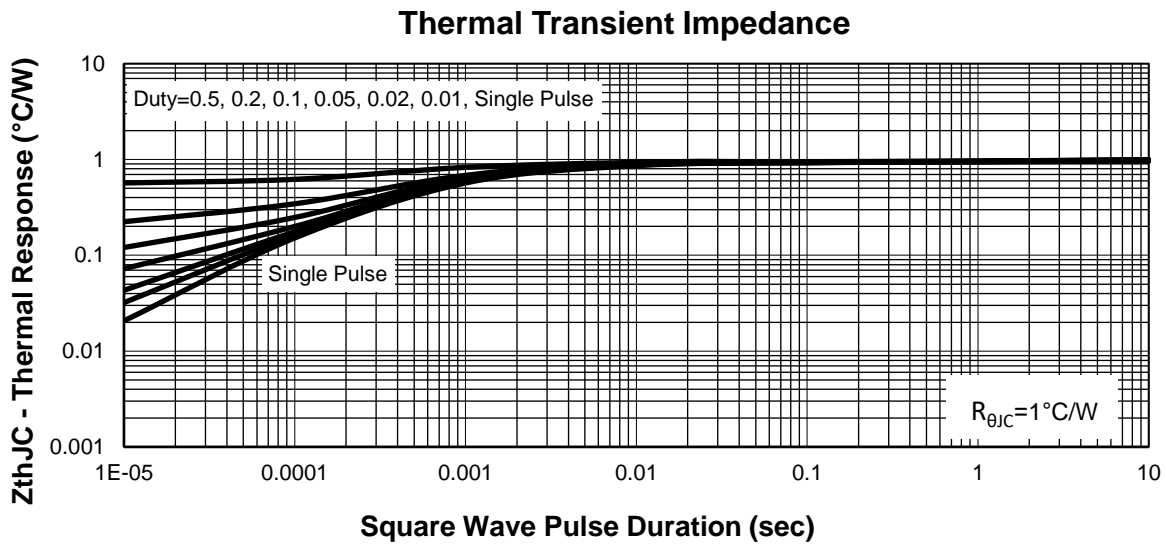
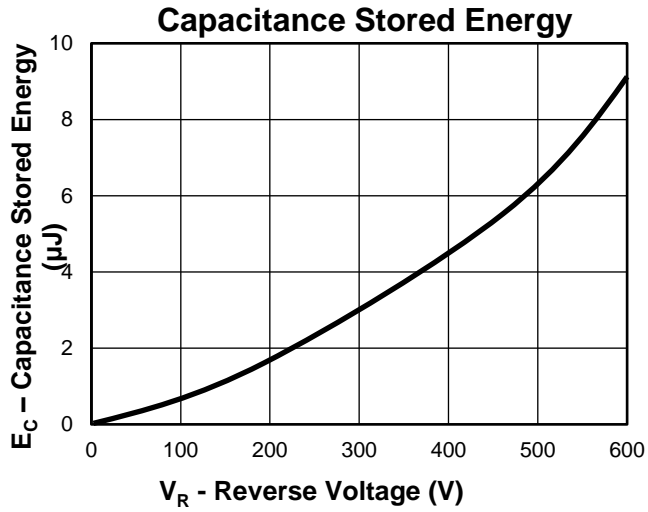
2nd Line: Part Number(006065B)

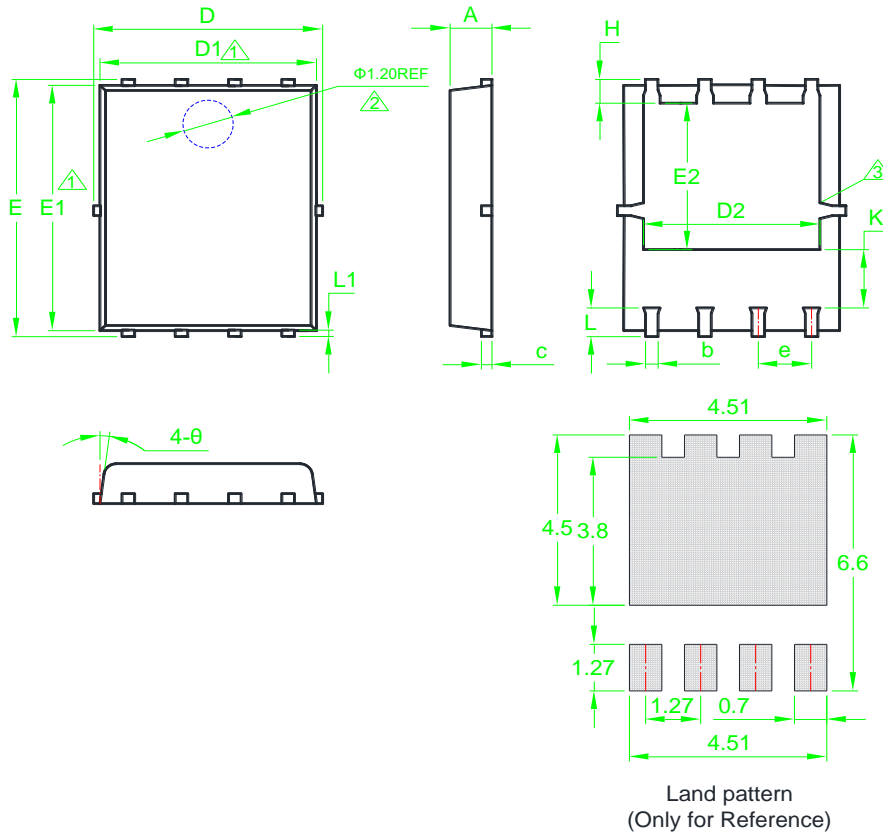
3rd Line: Lot Number(YWWXXX)

### Typical Characteristics



### Typical Characteristics



**Package Information**
**PDFN5060**


SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	1.00	1.20	0.035	0.039	0.047	E2	3.27	3.50	3.90	0.129	0.138	0.154
b	0.25	*	0.50	0.010	*	0.020	e	1.27BSC			0.050BSC		
c	0.20	0.25	0.30	0.008	0.010	0.012	H	0.41	0.51	0.71	0.016	0.020	0.028
D	5.15BSC			0.203BSC			K	1.10	1.35	1.50	0.043	0.053	0.059
D1	4.80	5.00	5.40	0.189	0.197	0.213	L	0.51	0.61	0.71	0.020	0.024	0.028
D2	3.60	*	4.40	0.142	*	0.173	L1	0.06	0.13	0.30	0.002	0.005	0.012
E	5.90	6.15	6.30	0.232	0.242	0.248	θ	0°	*	12°	0°	*	12°
E1	5.40	5.80	5.95	0.213	0.228	0.234							

- ① Dimensions D1 and E1 do not include mold flash protrusions or gate burrs.
- ② The existence and size of demolding hole are variable depending on mold.
- ③ The size and shape of exposed pad are variable depending on mold.

**Customer Service**

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Kwansemi reserves the right to change the specifications and circuitry without notice at any time. The Products are not designed for use in hostile environments, including, without limitation, aircraft, nuclear power generation, medical appliances, and devices or systems in which malfunction of any Product can reasonably be expected to result in a personal injury. Seller's customers using or selling Seller's products for use in such applications do so at their own risk and agree to fully defend and indemnify Seller.