

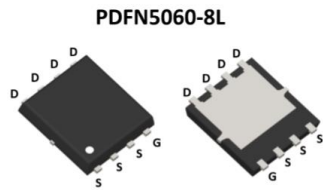
**Features**

- 100V, 90A
- $R_{DS(ON)} = 5.2m\Omega$  (Max.) @  $V_{GS} = 10V, I_D = 20A$
- Low  $R_{DS(on)}$  & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Fast switching and soft recovery
- 100% UIS tested , 100%  $\Delta V_{DS}$  Tested

**Application**

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor
- Invertors

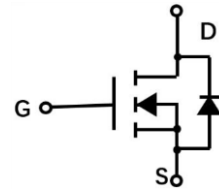
**Package**



PDFN5060-8L

DFN5\*6

SEG5R0N10AG



**Absolute Maximum Ratings**  $T_C=25^\circ C$  unless otherwise specified

Symbol	Parameter	Max.	Units
$V_{DSS}$	Drain-Source Voltage	100	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	$T_C = 25^\circ C$ 90	A
$I_{DM}$	Pulsed Drain Current	360	A
$E_{AS}$	Single pulse avalanche energy <sup>note5</sup>	688	mJ
$P_D$	Power Dissipation	$T_C = 25^\circ C$ 95	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case <sup>note2</sup>	1.18	$^\circ C/W$
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to +175	$^\circ C$

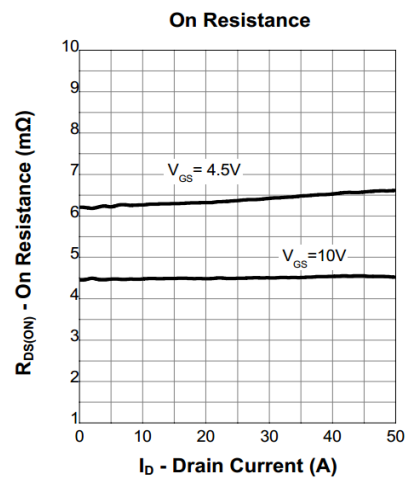
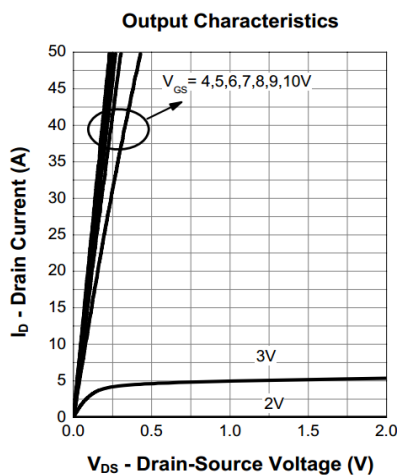
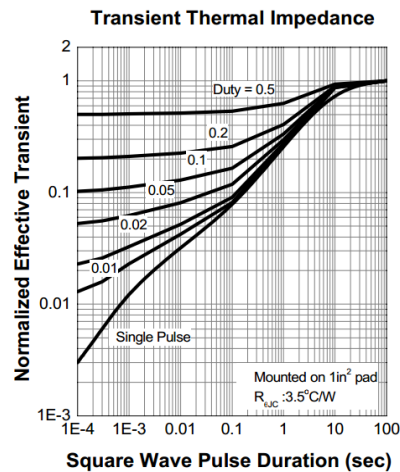
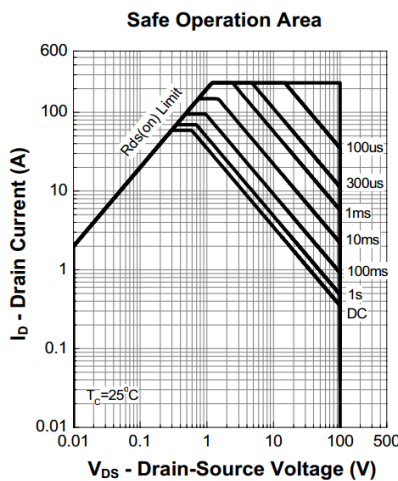
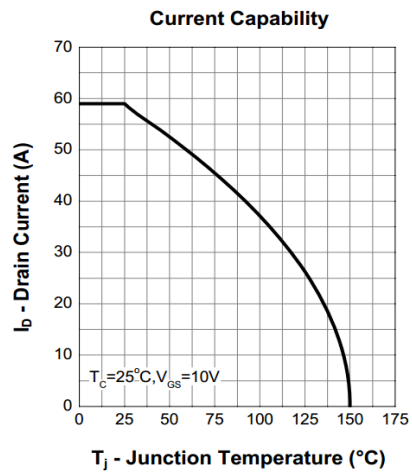
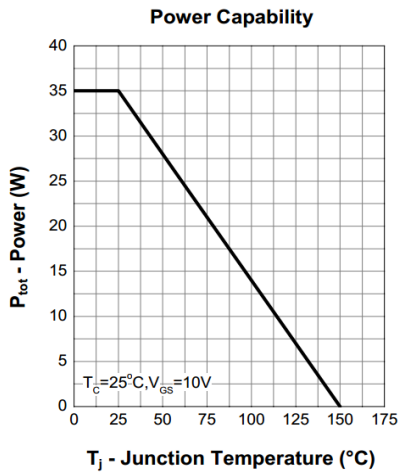
**Electrical Characteristics**  $T_C=25^{\circ}\text{C}$  unless otherwise specified

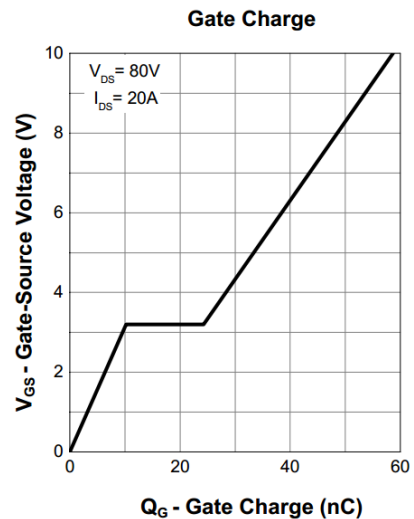
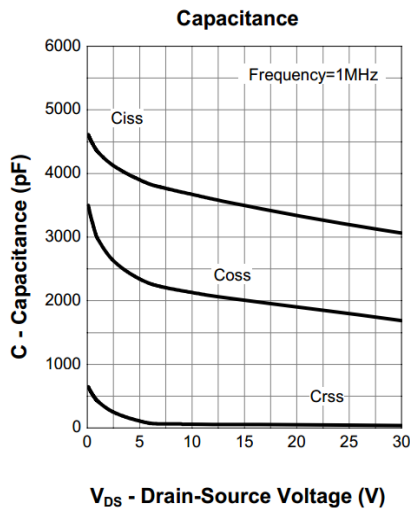
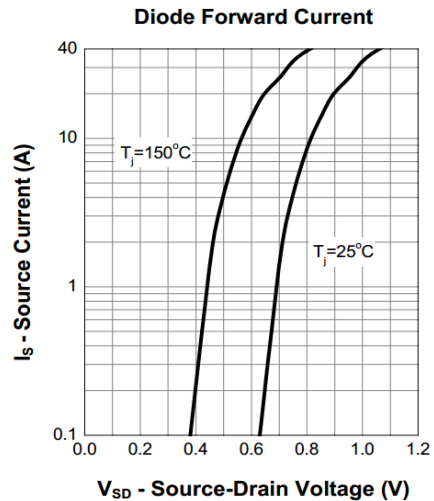
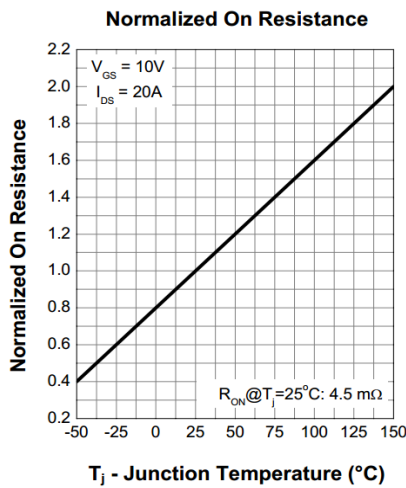
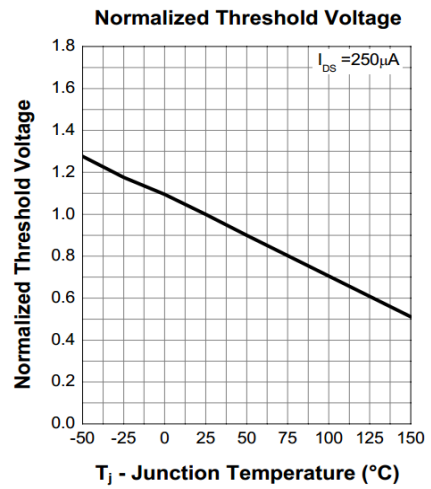
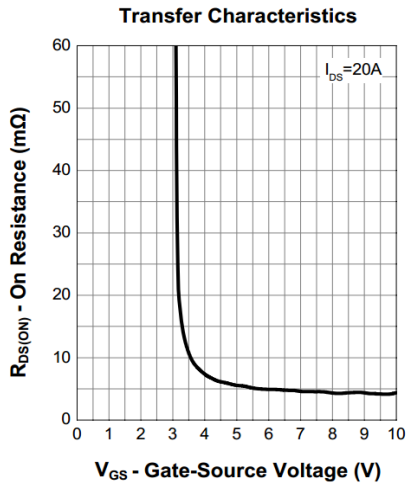
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	100	-	-	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS} = 80V, V_{GS} = 0V$	-	-	1	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	$\pm 100$	nA
<b>On Characteristics</b> <sup>note3</sup>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.5	-	2.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 10V, I_D = 20A$	-	-	5.2	$m\Omega$
		$V_{GS} = 4.5V, I_D = 10A$	-	-	7.6	$m\Omega$
<b>Dynamic Characteristics</b> <sup>note4</sup>						
$C_{iss}$	Input Capacitance	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1.0MHz$	-	3390	-	pF
$C_{oss}$	Output Capacitance		-	1940	-	pF
$C_{rss}$	Reverse Transfer Capacitance		-	210	-	pF
<b>Switching Characteristics</b> <sup>note4</sup>						
$Q_g$	Total Gate Charge	$V_{DS} = 80V, I_D = 10A,$ $V_{GS} = 10V$	-	58.7	-	nC
$Q_{gs}$	Gate-Source Charge		-	10.2	-	
$Q_{gd}$	Gate-Drain("Miller") Charge		-	14.1	-	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 80V, I_D = 20A,$ $R_G = 3.3\Omega, V_{GEN} = 10V$ $R_L = 4\Omega,$	-	13.2	-	ns
$t_r$	Turn-On Rise Time		-	57.8	-	
$t_{d(off)}$	Turn-Off Delay Time		-	37.6	-	
$t_f$	Turn-Off Fall Time		-	63.8	-	
<b>Drain-Source Diode Characteristics</b>						
$V_{SD}$	Diode Forward Voltage <sup>note3</sup>	$I_S = 20A, V_{GS} = 0V$	-	-	1.2	V
$I_S$	Diode Forward Current <sup>note2</sup>		-	-	90	A
$t_{rr}$	Reverse Recovery Time	$I_{SD} = 20A,$ $dI_{SD}/dt = 100A/\mu s$	-	61	-	ns
$Q_{rr}$	Reverse Recovery Charge		-	105	-	nC

## Notes:

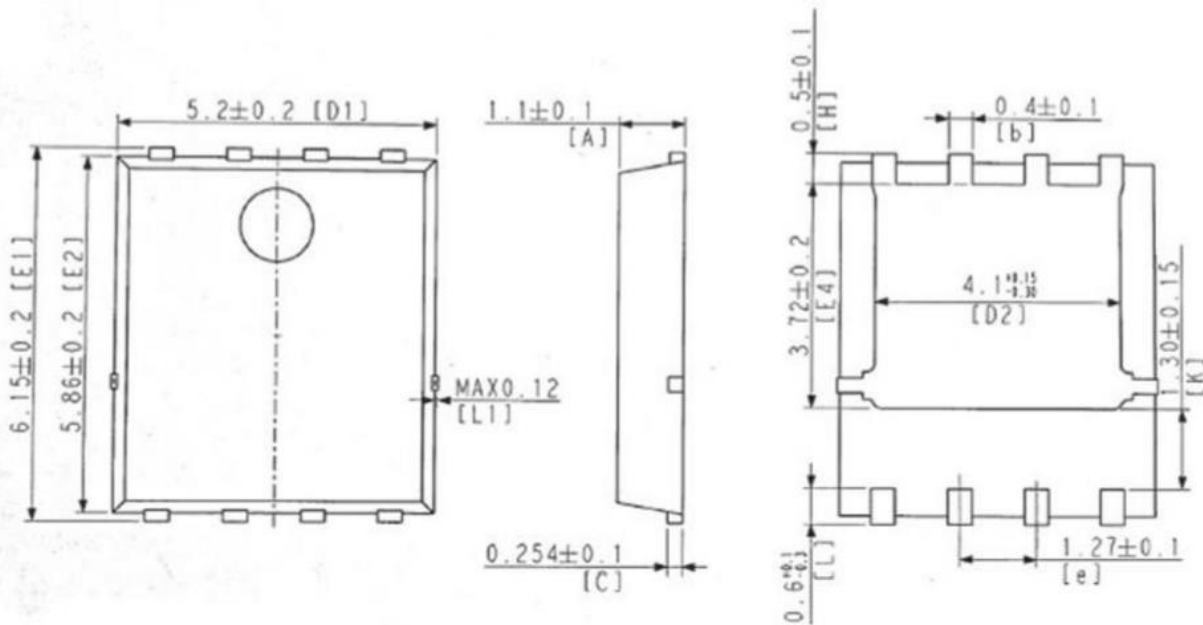
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production
5. EAS condition :  $T_J = 25^{\circ}\text{C}, V_{DD} = 50V, V_G = 10V, L = 0.5mH, R_g = 25\Omega$

### Typical Performance Characteristics





■ PDFN5060-8L Package Information



## SEG5R0N10AG Product Description

Silicon N-Channel MOSFET



### NOTE:

1. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
2. Please do not exceed the absolute maximum ratings of the device when circuit designing.
3. Winsemi Microelectronics Co., Ltd reserved the right to make changes in this specification sheet and is subject to change without prior notice.

### CONTACT:

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