



## P-Channel Enhancement Mode Field Effect Transistor

### Product Summary

$V_{DS}$	-30 V
$I_D$	-55 A
$R_{DS(ON)}$ ( at $V_{GS}=-20V$ )	9 m
$R_{DS(ON)}$ ( at $V_{GS}=-10V$ )	10.5 m
$R_{DS(ON)}$ ( at $V_{GS}=-4.5V$ )	20 m
100% EAS Tested	
100% $V_{DS}$ Tested	

### General Description

Trench Power LV MOSFET technology  
High density cell design for Low RDS(ON)  
High Speed switching  
Moisture Sensitivity Level 1  
Epoxy Meets UL 94 V-0 Flammability Rating  
Halogen Free

### Applications

Battery protection  
Power management  
Load switch

### Absolute Maximum Ratings ( $T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	$V_{DS}$	-30	V
Gate-source Voltage	$V_{GS}$	$\pm 25$	V

$T_A=25$

Drain Current



## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	$\mu A$
		$V_{DS}=-30V, V_{GS}=0V, T_J=150$	-	-	-100	
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-2L \quad \text{E3}$				



### Typical Electrical and Thermal Characteristics Diagrams

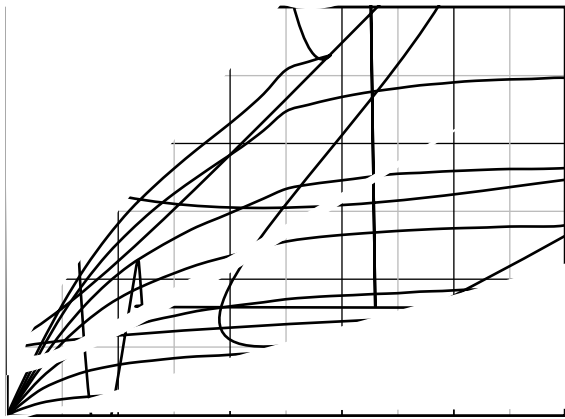


Figure 1. Output Characteristics

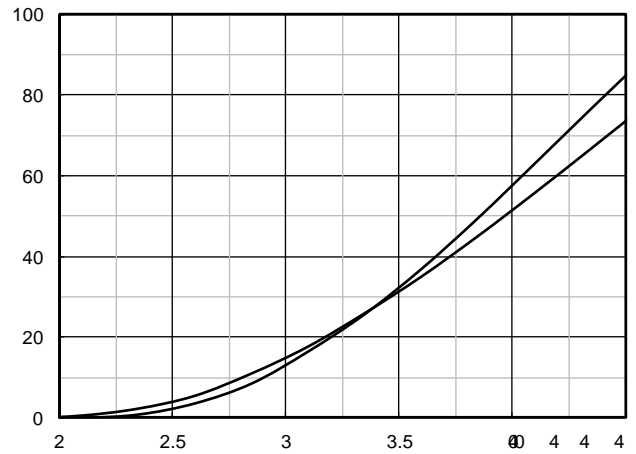


Figure 2. Transfer Characteristics

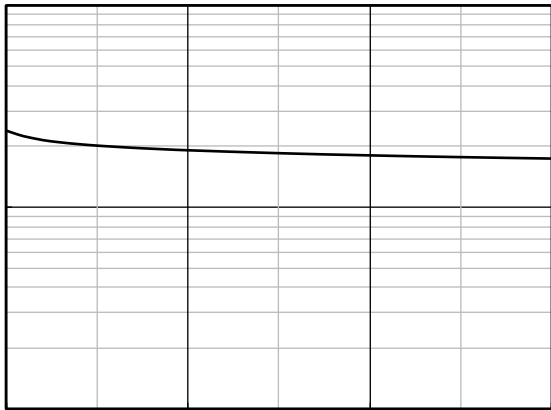


Figure 3. Capacitance Characteristics

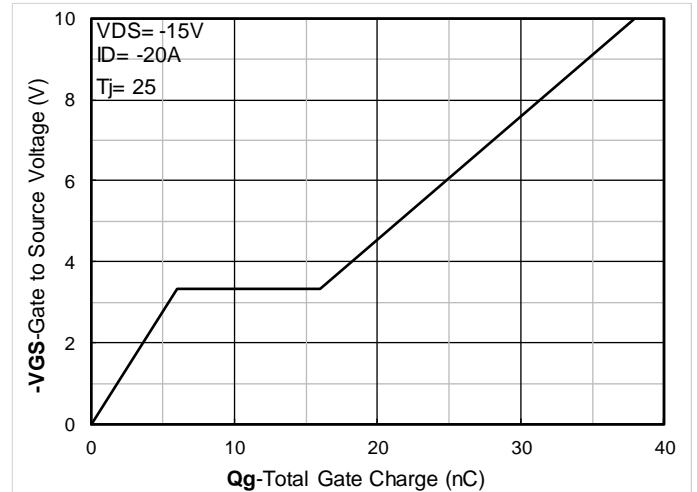


Figure 4. Gate Charge

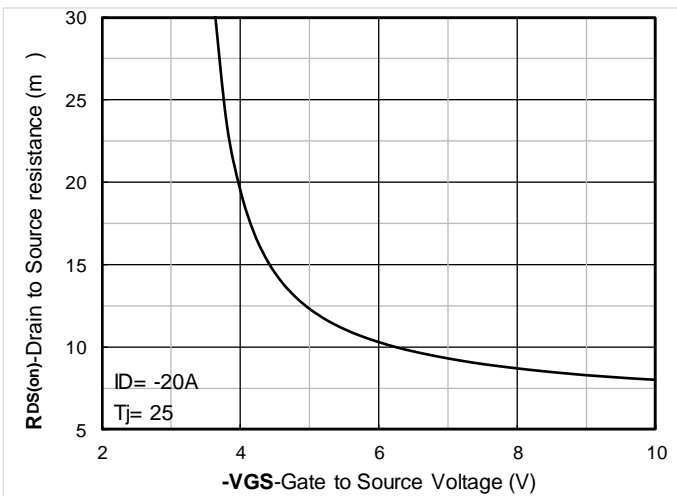


Figure 5. On-Resistance vs Gate to Source Voltage

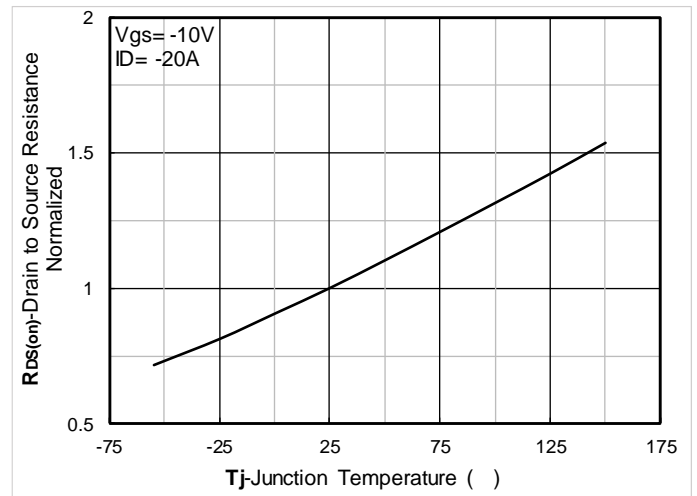


Figure 6. Normalized On-Resistance



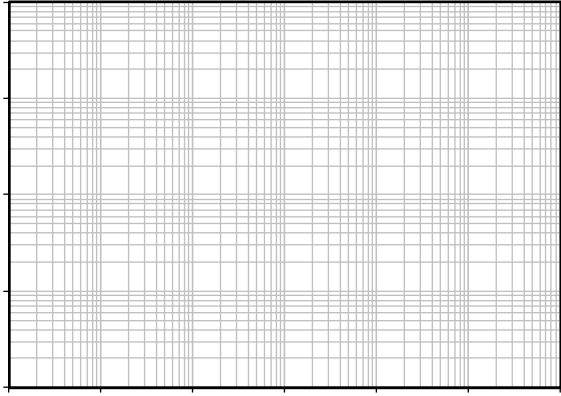


Figure 13. Maximum Transient Thermal Impedance

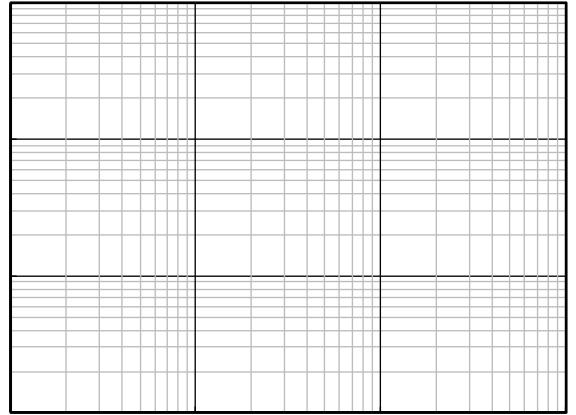
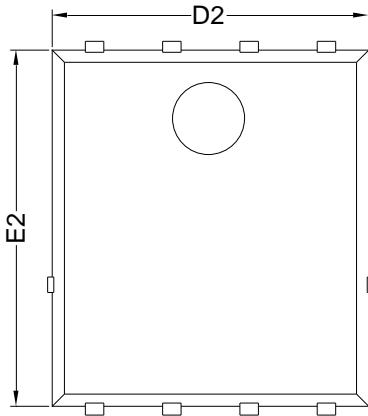


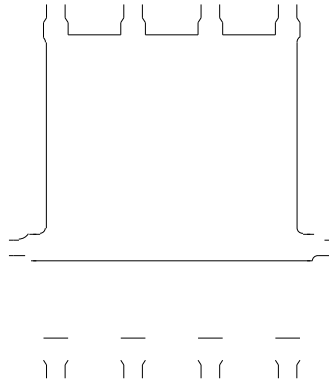
Figure 14. Safe Operation Area



## PDFN5060-8L-B-1.1MM Package information



Top View



Bottom View

Side View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	5.15	5.35	5.55
E	5.95	6.15	6.35
A	1.00	1.10	1.20
A1	0.254 BSC		
A2			0.10
D1	3.92	4.12	4.32
E1	3.52	3.72	3.92
D2	5.00	5.20	5.40
E2	5.66	5.86	6.06
E3	0.254 REF		
E4	0.21 REF		
L1	0.56	0.66	0.76
L2	0.50 BSC		
b	0.31	0.41	0.51
e	1.27 BSC		

**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.10$ mm.
3. The pad layout is for reference purposes only.

**YJG55P03B**