



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	7.3mΩ@10V	25A
	10.5mΩ@4.5V	

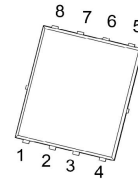
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

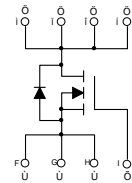
Application

- DC/DC Converter
- Synchronous Rectification
- High-Frequency Switch

PDFN5×6-8L



Schematic diagram



MARKING:



25N03L = Device Code
XX = Date Code
Solid Dot = Green Indicator

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	30	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ¹	I_D	25	A
$T_C = 25^\circ\text{C}$			
Pulsed Drain Current ²	I_{DM}	100	A
Single Pulsed Avalanche Current ³	I_{AS}	35	A
Single Pulsed Avalanche Energy ³	E_{AS}	61	mJ
Power Dissipation ⁵	P_D	25	W
$T_C = 25^\circ\text{C}$			
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	5	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

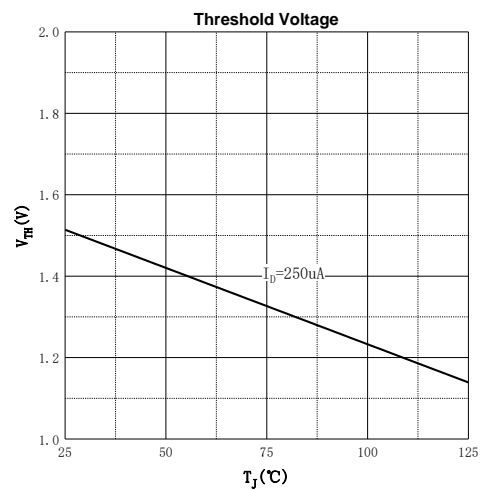
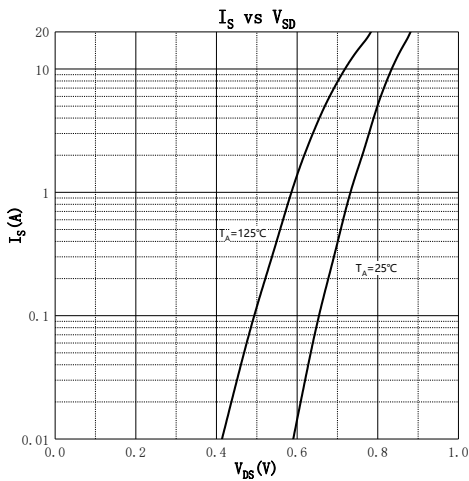
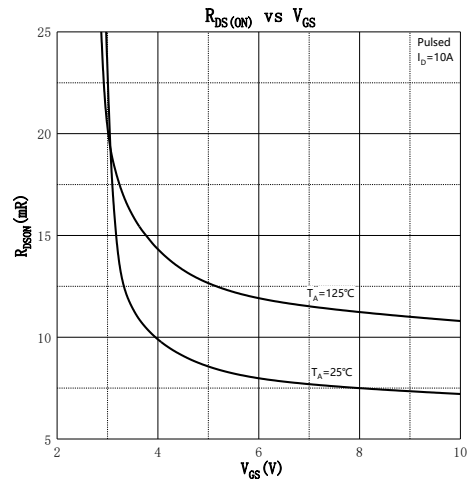
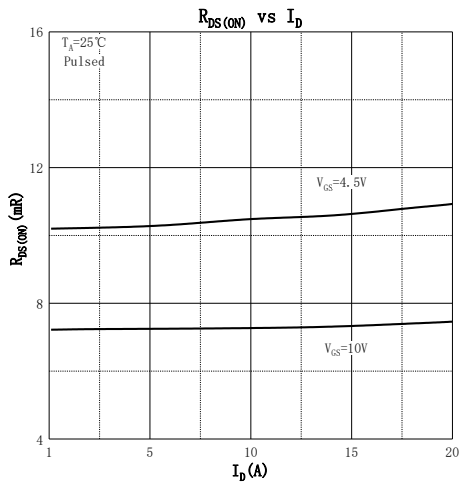
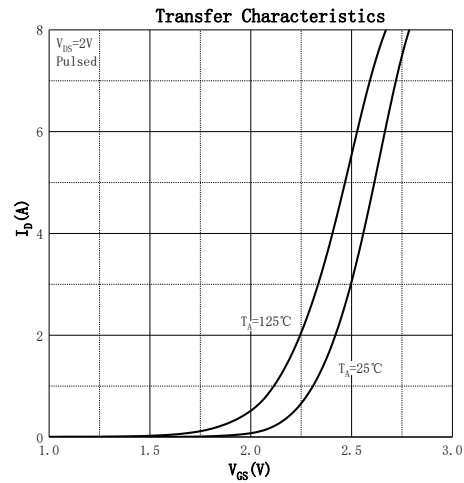
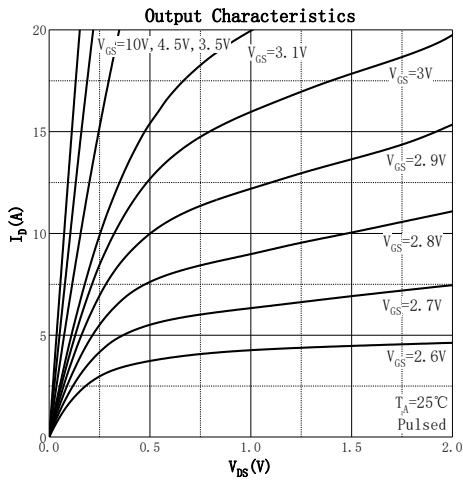
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$		7.3	9	$m\Omega$
		$V_{GS} = 4.5V, I_D = 12A$		10.5	13	$m\Omega$
Forward Transconductance	g_{FS}	$V_{DS} = 5V, I_D = 10A$		15		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		1217		pF
Output Capacitance	C_{oss}			141		
Reverse Transfer Capacitance	C_{rss}			129		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		2		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V, I_D = 10A$		21		nC
Gate-source Charge	Q_{gs}			3.2		
Gate-drain Charge	Q_{gd}			5.6		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V, R_L = 1.5\Omega$ $R_G = 3\Omega$		6.5		ns
Turn-on Rise Time	t_r			5.2		
Turn-off Delay Time	$t_{d(off)}$			20		
Turn-off Fall Time	t_f			4.5		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = 3A$			1.2	V

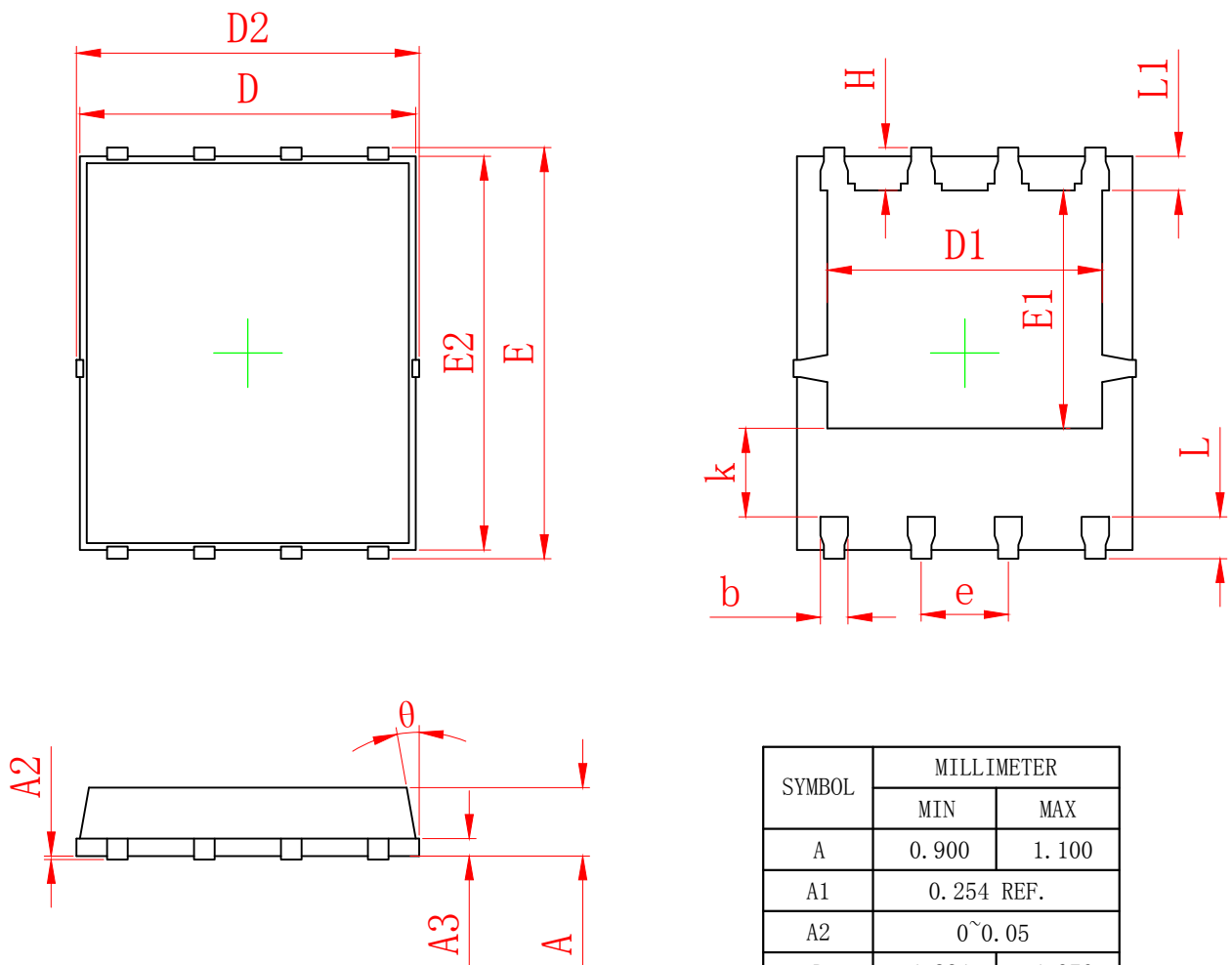
Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = 15V, V_{GS} = 10V, L = 0.1mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



PDFN5×6-8L Package Information



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.100
A1	0.254 REF.	
A2	0 [~] 0.05	
D	4.824	4.976
D1	3.910	4.110
D2	4.944	5.076
E	5.924	6.076
E1	3.375	3.575
E2	5.674	5.826
b	0.350	0.450
e	1.270 TYP.	
L	0.534	0.686
L1	0.424	0.576
k	1.190	1.390
H	0.549	0.701
θ	8°	12°