Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	25mΩ@-10V	-35A
	30mΩ@-4.5V	

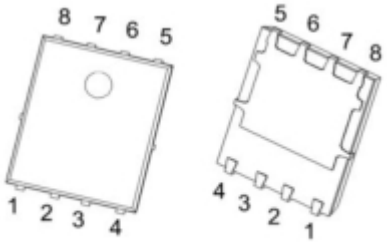
Feature

- Fast switching speed
- Surface mount package
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Application

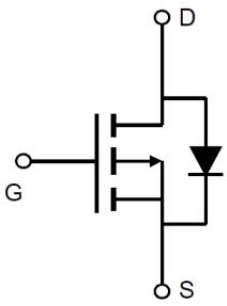
- DC-DC Converters.
- Motor Control.

Package

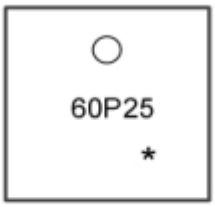


PDFNWB5×6-8L

Circuit diagram



Marking



60P25 =Device Code
***** =Month Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current(Tc=25°C)	I_D	-25	A
Pulse Drain Current Tested	I_{DM}	-100	A
Maximum Power Dissipation(Tc=25°C)	P_D	50	W
Thermal Resistance-Junction to Case	$R_{\theta JC}$	2.5	°C/W
Maximum Junction Temperature	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-48V, V_{GS} = 0V			-1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.7	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-5A		25	35	mΩ
		V_{GS} =-4.5V, I_D =-4A		30	42	
Dynamic and Switching Characteristics						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-30V, f=1MHz		2417		pF
Output Capacitance	C_{oss}			179		
Reverse Transfer Capacitance	C_{rss}			120		
Turn-on Delay Time	$T_{d(on)}$	V_{DD} =-30V, R_L=4.7Ω, V_{GEN}=-10V, R_{GEN}=3Ω		9.8		nS
Turn-on Rise Time	T_r			6.1		
Turn-off Delay Time	$T_{d(off)}$			44		
Turn-off Fall Time	T_f			12.7		
Total Gate Charge	Q_g	V_{DS}=-30V, V_{GS}=-10V, I_D=-6A		46.5	55	nC
Gate-Source Charge	Q_{gs}			9.1		
Gate-Drain Charge	Q_{gd}			9.2		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD}=-1A,V_{GS}=0V			-1.2	V

Typical Characteristics

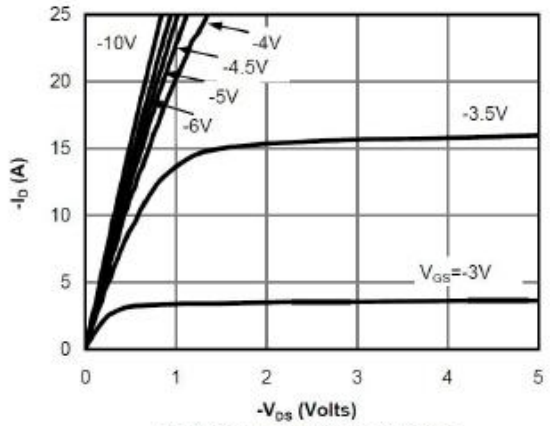


Fig 1: On-Region Characteristics

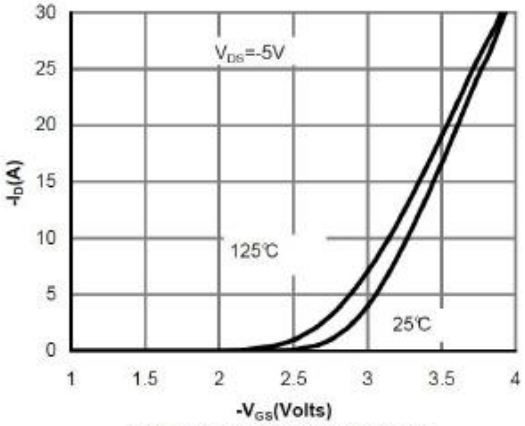


Figure 2: Transfer Characteristics

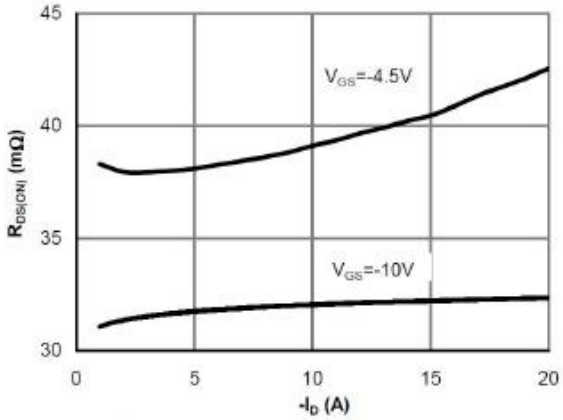


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

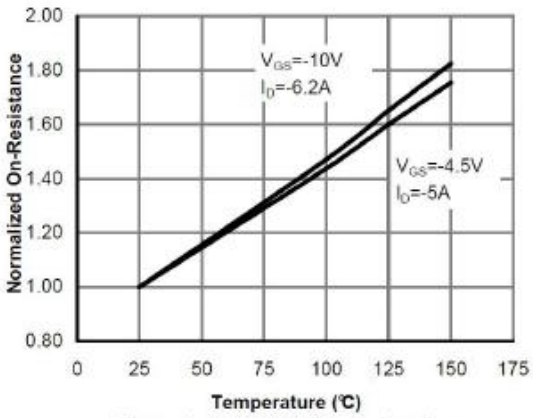


Figure 4: On-Resistance vs. Junction Temperature

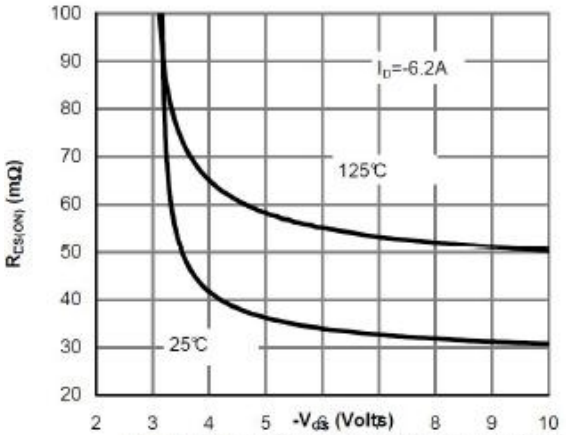


Figure 5: On-Resistance vs. Gate-Source Voltage

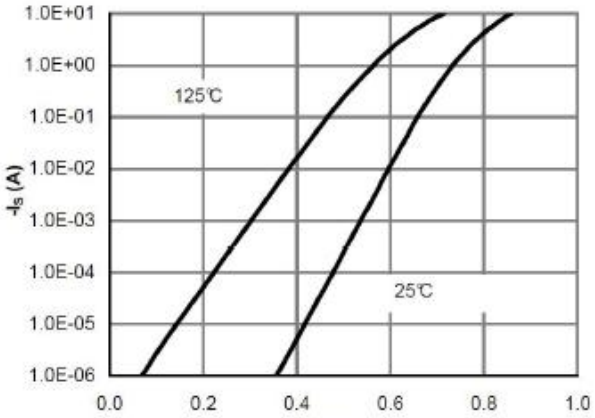


Figure 6: Body-Diode Characteristics

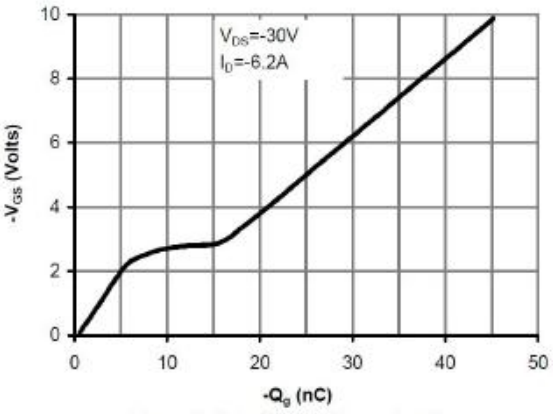


Figure 7: Gate-Charge Characteristics

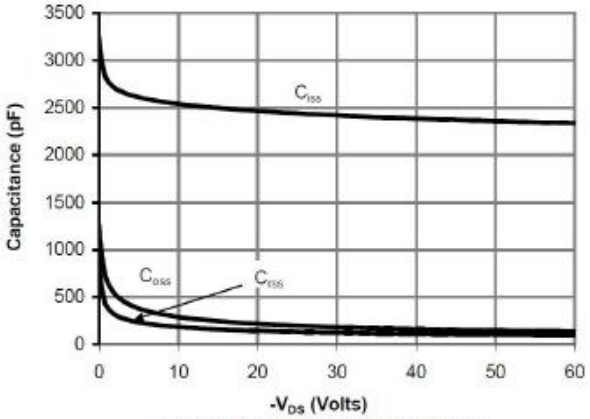


Figure 8: Capacitance Characteristics

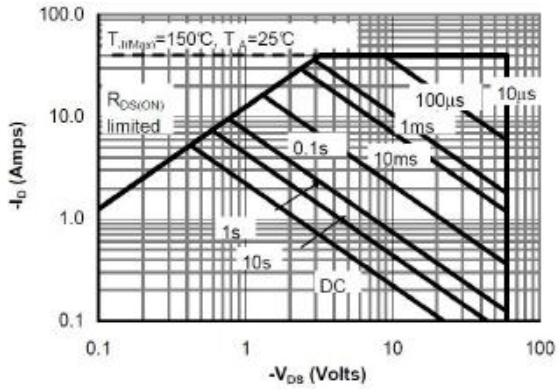


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

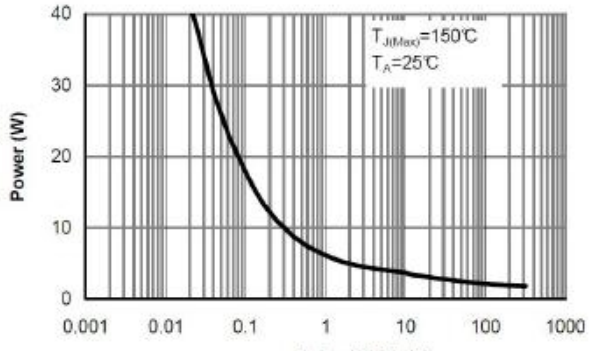


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

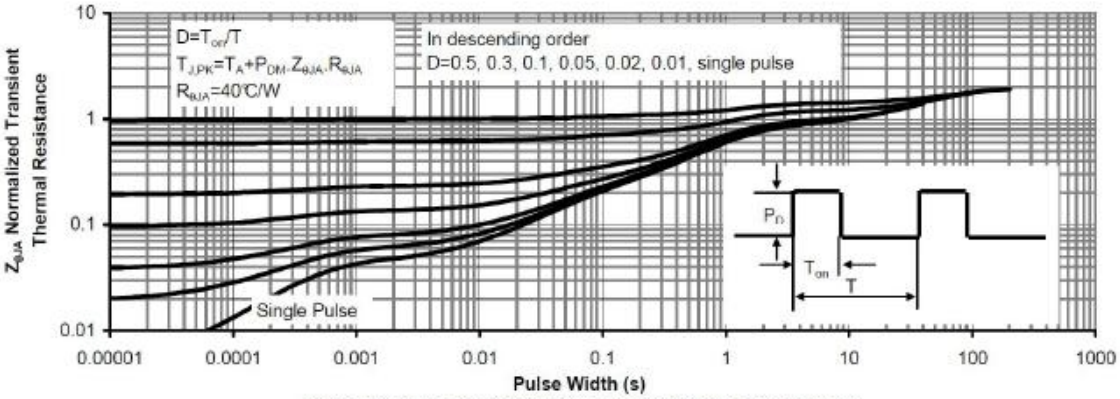
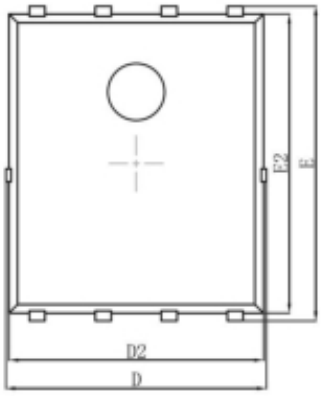
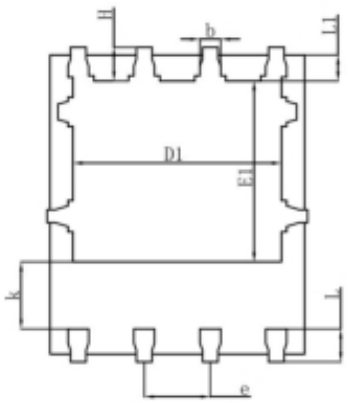


Figure 11: Normalized Maximum Transient Thermal Impedance

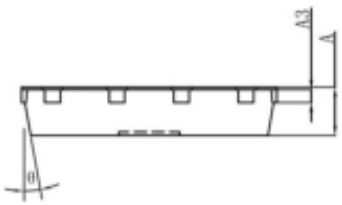
PDFNWB5×6-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°