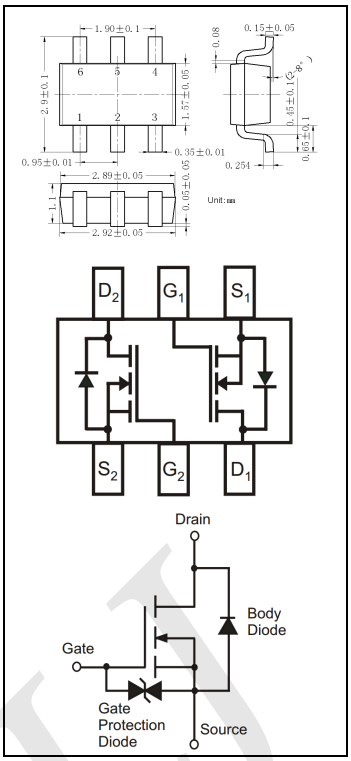
SOT-23-6L Plastic-Encapsulate MOSFETS

DMN601DMK-7

Dual N-Channel Enhancement Mode Field Effect Transistor



Features

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/output Leakage
- Ultra-Small Surface Mount Package
- Lead Free By Design/RoHS Compliant [2)]
- ESD Protected Up to 2kV
- "Green" Device

Maximum Ratings (T_A=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source voltage	60	V
V_{GSS}	Gate-Source voltage	±20	
I_D	Continuous Drain Current [1)]	305	mA
I_{DM}	Pulsed Drain Current [3)]	800	
P_D	Total Power Dissipation [1)]	225	mW
T_J, T_{STG}	Operating and Storage Temperature Range	-65 to +150	°C

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	556	°C/W

Notes

1. Device mounted on FR-4 PCB.
2. No purposefully added lead.
3. Pulse width ≤10μS, Duty Cycle ≤1%

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Off Characteristics [5]						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 10μA	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60V, V_{GS} = 0V			1	μA
I_{GSS}	Gate-body Leakage current	V_{DS} = 0V, V_{GS} = ±20V			±10	μA
On Characteristics [5]						
$V_{GS(th)}$	Gate-Threshold Voltage	V_{DS} = 10V, I_D = 1mA	1.0	1.6	2.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS} =10V, I_D = 0.2A			2.4	Ω
		V_{GS} = 4V, I_D = 0.2A			4.0	
$\|Y_{fs}\|$	Forward Transfer Admittance	V_{DS} = 10V, I_D = 0.2A	100			mS
V_{SD}	Diode Forward Voltage [5]	I_S = 115mA, V_{GS} = 0V	0.5		1.4	V
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{GS} = 0V V_{DS} = 25V f = 1.0MHz			50	pF
C_{oss}	Output Capacitance				25	
C_{rss}	Reverse Transfer Capacitance				5.0	

Notes

5. Short duration test pulse used to minimize self-heating effect.

Typical Characteristics

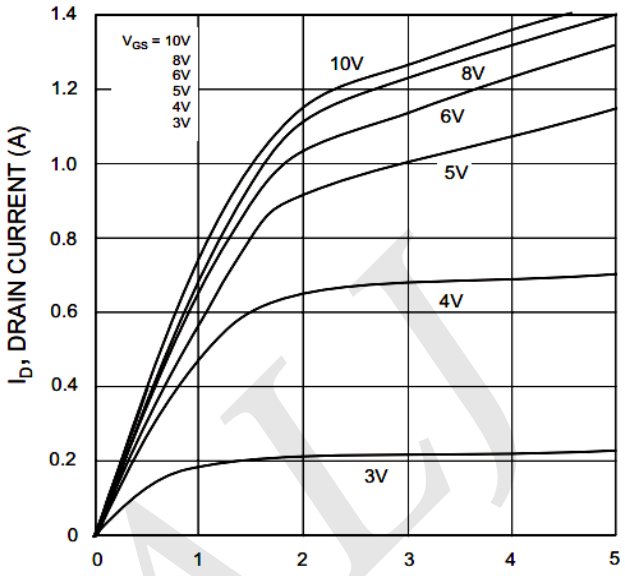


Fig. 1 Typical Output Characteristics

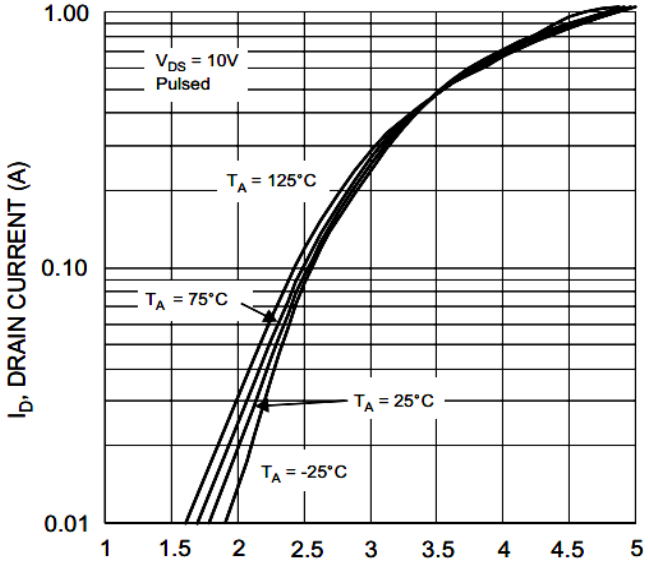


Fig. 2 Typical Transfer Characteristics

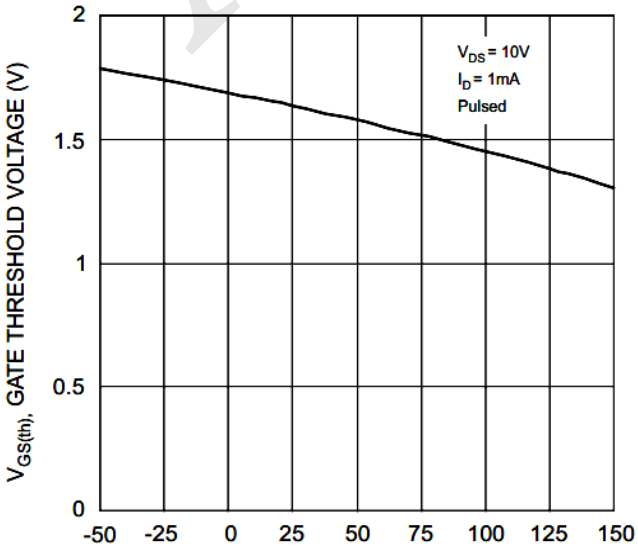


Fig. 3 Gate Threshold Voltage
vs. Channel Temperature

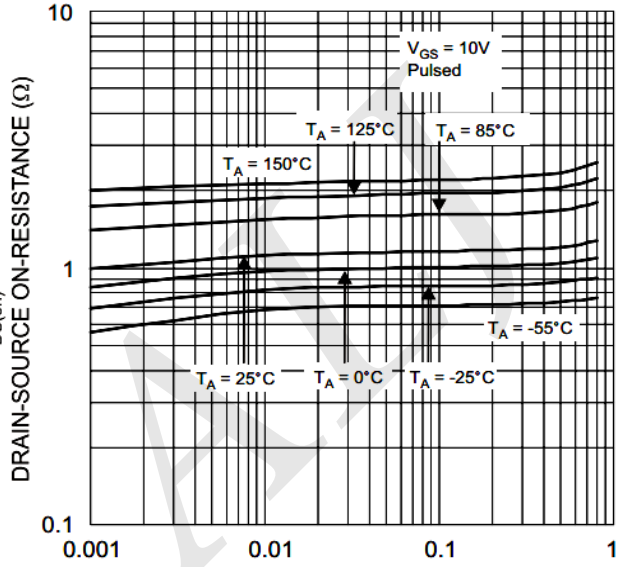


Fig. 4 Static Drain-Source On-Resistance
Vs. Drain Current

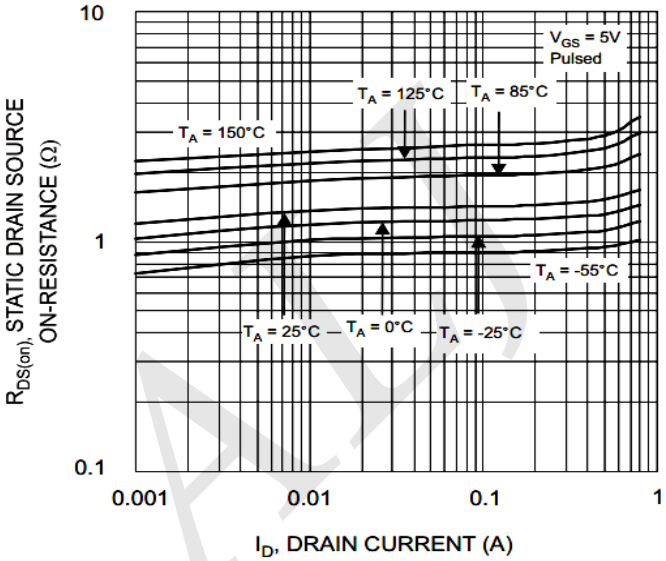


Fig. 5 Static Drain-Source On-Resistance
vs. Drain Current

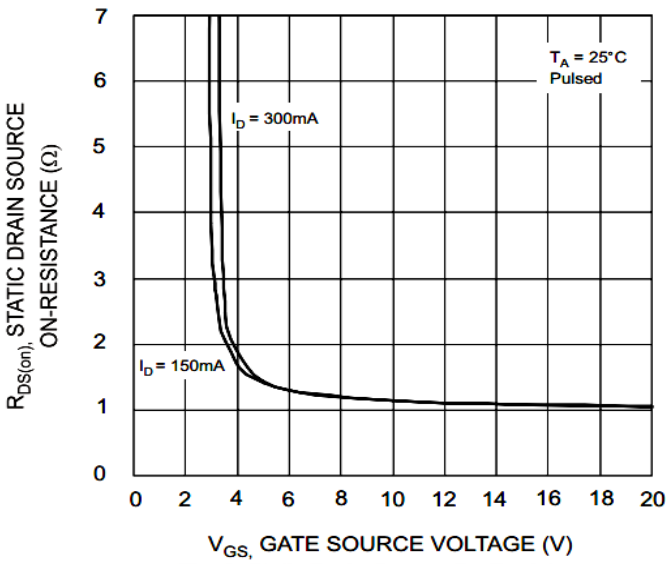


Fig. 6 Static Drain-Source On-Resistance
vs. Gate-Source Voltage

Typical Characteristics (Cont.)

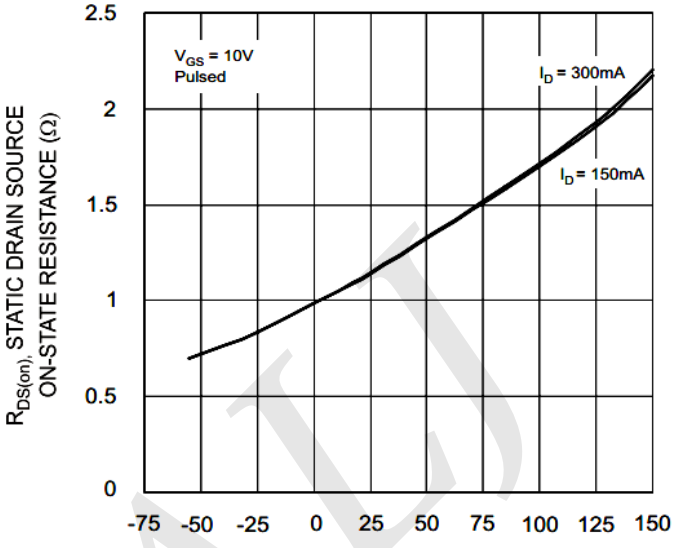


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

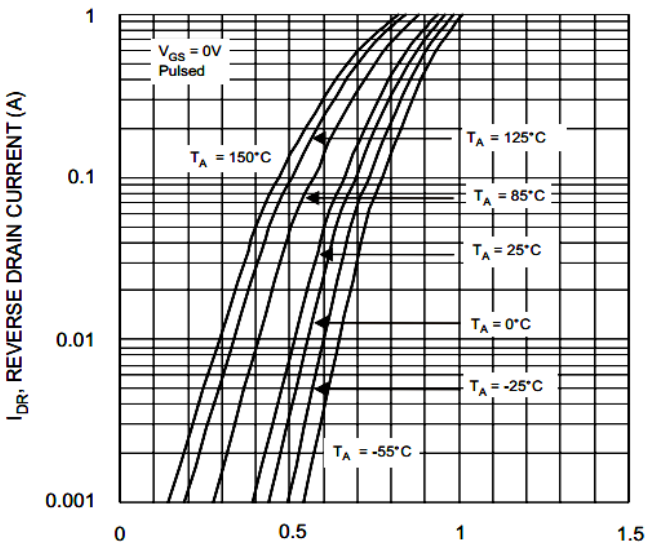


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

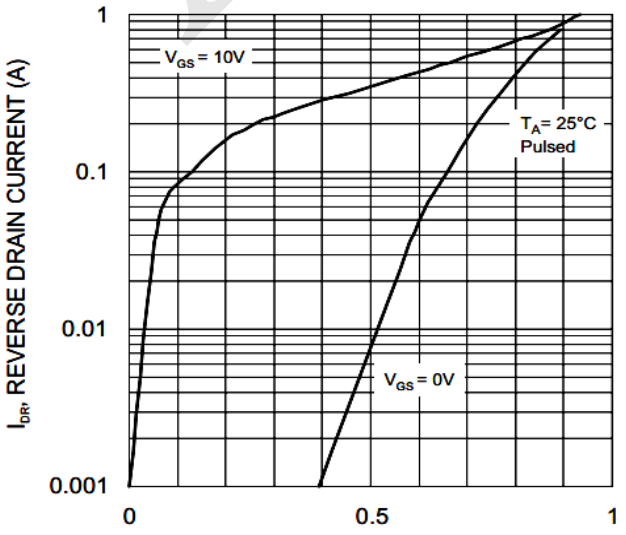


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

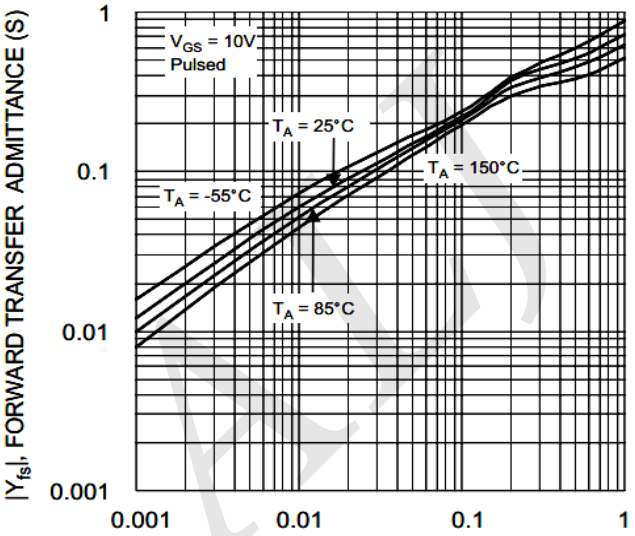


Fig.10 Forward Transfer Admittance vs. Drain Current

Typical Characteristics (Cont.)