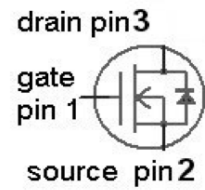
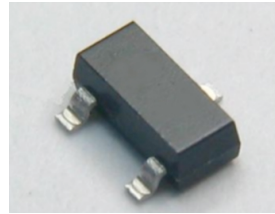


DMS05N60 N-Channel Depletion-Mode MOSFET

FEATURES

- Depletion Mode (Normally On)
- Advanced Planar Technology
- Rugged Poly-silicon Gate Cell Structure
- Fast Switching Speed
- RoHS Compliant/Lead Free
- ESD Sensitive



Applications

- Normally-on Switches
- SMPS start-up Circuit
- Linear Amplifier
- Converters
- Constant Current Source
- Telecom

BV_{DSX}	$R_{DS(ON)}$ (Max.)	$I_{DSS,min}$
600V	700Ω	12mA

RoHS
COMPLIANT

HALOGEN
FREE
Available

Absolute Maximum Ratings

$T_A=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	DMS05N60	Unit
V_{DSX}	Drain-to-Source Voltage ^[1]	600	V
V_{DGX}	Drain-to-Gate Voltage ^[1]	600	V
I_D	Continuous Drain Current	0.020	A
I_{DM}	Pulsed Drain Current	0.081	
P_D	Power Dissipation	0.50	W
V_{GS}	Gate-to-Source Voltage	±20	V
T_L	Soldering Temperature Distance of 1.6mm from case for 10 seconds	300	°C
T_J and T_{STG}	Operating and Storage Temperature Range	-55~150	

Caution: Stresses greater than those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device.

Thermal Characteristics

Symbol	Parameter	DMS05N60	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	K/W



DMS05N60 N-Channel Depletion-Mode MOSFET

Electrical Characteristics

OFF Characteristics

TA=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
BV _{DSX}	Drain-to-Source Breakdown Voltage	600	--	--	V	V _{GS} =-5V, I _D =250μA
I _{D(OFF)}	Drain-to-Source Teakage Current	--	--	0.1	μA	V _{DS} =600V, V _{GS} =-5V
		--	--	10	μA	V _{DS} =600V, V _{GS} =-5V T _J =125°C
I _{GSS}	Gate-to-Source Leakage Current	--	--	100	nA	V _{GS} =+20V, V _{DS} =0V
		--	--	-100		V _{GS} =-20V, V _{DS} =0V

ON Characteristics

TA=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
I _{DSS}	Saturated Drain-to-Source Current	12	--	--	mA	V _{GS} =0V, V _{DS} =25V
R _{DS(ON)}	Static Drain-to-Source On-Resistance	--	500	700	Ω	V _{GS} =0V, I _D =3Ma ^[4]
V _{GS(OFF)}	Gate-to-Source Cut-off Voltage	-2.7	--	-1.5	V	V _{DS} =3V, I _D =8μA
gfs	Forward Transconductance	--	15.4	--	mS	V _{DS} =10V, I _D =5mA

Dynamic Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
C _{ISS}	Input Capacitance	--	12.3	--	Pf	V _{GS} =-5V V _{DS} =25V f=1.0MHz
C _{OSS}	Oput Capacitance	--	2.6	--		
C _{RSS}	Reverse Transfer Capacitance	--	1.8	--		
Q _G	Total Gate Charge	--	1.55	--	nC	V _{GS} =-5V~5V V _{DS} =300V, I _D =5mA
Q _{GS}	Gate-to-Source Charge	--	0.12	--		
Q _{GD}	Gate-to-Drain (Miller) Charge	--	0.56	--		

Resistive Switching Characteristics

Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
T _{d(ON)}	Turn-on Delay Time	--	4	--	ns	V _{GS} =-5V~5V V _{DD} =300V, I _D =5Ma R _G =20Ohm
T _{rise}	Rise Time	--	9	--		
t _{d(OFF)}	Turn-off Delay Time	--	14	--		
t _{fall}	Fall Time	--	84	--		

Source-Drain Dioe Characteristics

TA=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V _{SD}	Diode Forward Voltage	--	--	1.2	V	I _{SD} =3.0mA, V _{GS} =-10V

NOTE:

[1] T_J=+25°C to +150°C

[2] Repetitive rating, pulse width limited by maximum junction temperature.

[3] Pulse width ≤ 380 μs ; duty cycle ≤ 2%

DMS05N60 N-Channel Depletion-Mode MOSFET

- Characteristic Curves

