



**Advanced Power
Electronics Corp.**

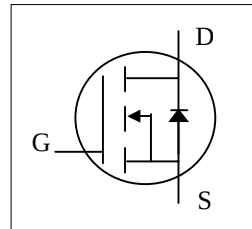
AP01L60T-H-HF

Halogen-Free Product

N-CHANNEL ENHANCEMENT MODE

POWER MOSFET

- ▼ Low Gate Charge
- ▼ Fast Switching Characteristics
- ▼ Simple Drive Requirement
- ▼ RoHS Compliant & Halogen-Free

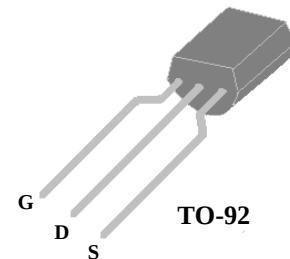


BV_{DSS}	700V
$R_{DS(ON)}$	13.5 Ω
I_D	160mA

Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The TO-92 package is widely used for all commercial-industrial applications.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	700	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_A=25^{\circ}\text{C}$	Continuous Drain Current, V_{GS} @ 10V	160	mA
$I_D@T_A=100^{\circ}\text{C}$	Continuous Drain Current, V_{GS} @ 10V	100	mA
I_{DM}	Pulsed Drain Current ¹	300	mA
$P_D@T_A=25^{\circ}\text{C}$	Total Power Dissipation	0.83	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}\text{C}$

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient	150	$^{\circ}\text{C}/\text{W}$



AP01L60T-H-HF

Electrical Characteristics@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	700	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =0.3A	-	-	13.5	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	-	4	V
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =0.3A	-	0.5	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =600V, V _{GS} =0V	-	-	100	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±30V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge	I _D =100mA	-	7	11	nC
Q _{gs}	Gate-Source Charge	V _{DS} =480V	-	1.4	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =10V	-	3.4	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =300V	-	8	-	ns
t _r	Rise Time	I _D =1A	-	5	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =10Ω	-	13	-	ns
t _f	Fall Time	V _{GS} =10V	-	9	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	260	420	pF
C _{oss}	Output Capacitance	V _{DS} =25V	-	20	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	3	-	pF
R _g	Gate Resistance	f=1.0MHz	-	3	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage	I _S =160mA, V _{GS} =0V	-	-	1.2	V
t _{rr}	Reverse Recovery Time	I _S =1A, V _{GS} =0V,	-	345	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	1	-	μC

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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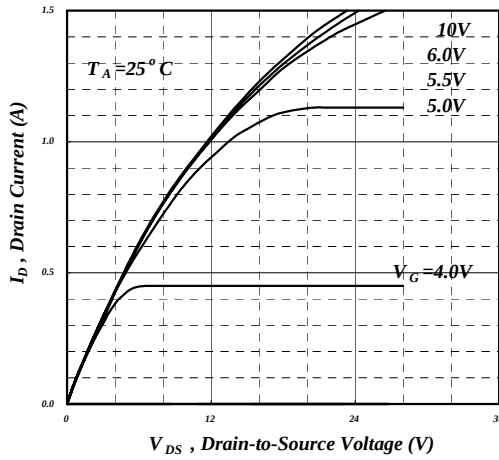


Fig 1. Typical Output Characteristics

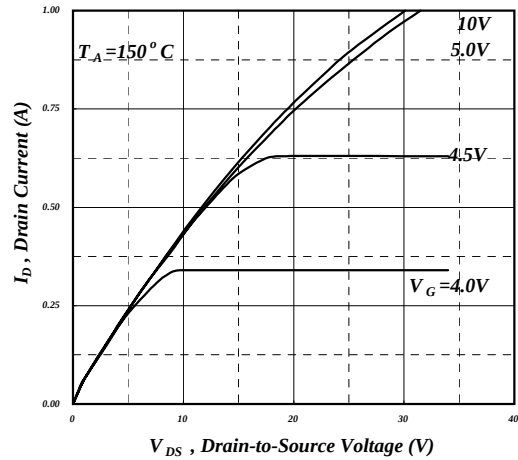


Fig 2. Typical Output Characteristics

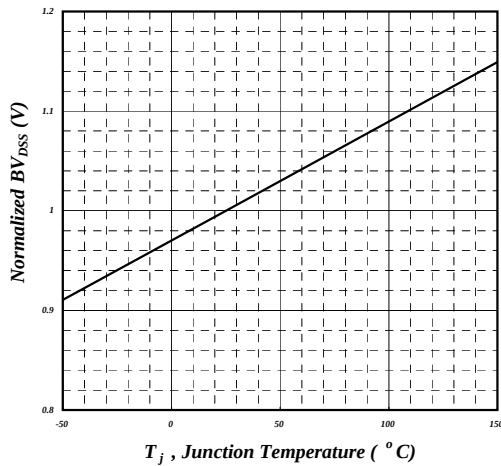


Fig 3. Normalized BV_{DSS} v.s. Junction Temperature

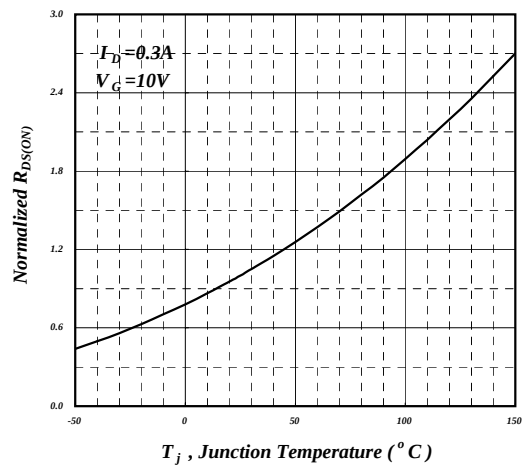


Fig 4. Normalized On-Resistance v.s. Junction Temperature

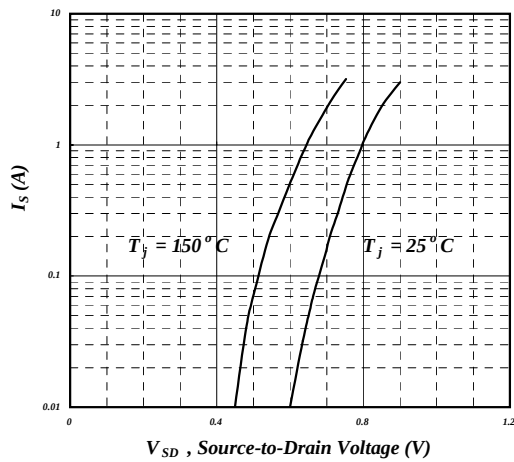


Fig 5. Forward Characteristic of Reverse Diode

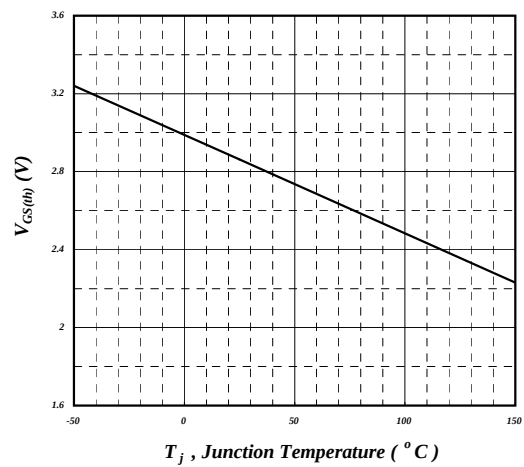


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

