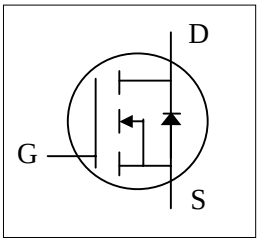
AP2761R-A-HF

Halogen-Free Product

Advanced Power Electronics Corp.

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

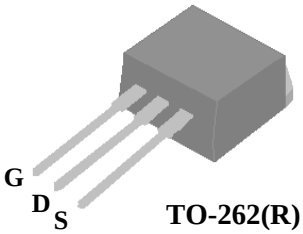
- ▼ **Lower On-resistance**
- ▼ **Fast Switching Characteristic**
- ▼ **Simple Drive Requirement**
- ▼ **RoHS Compliant**



BV_{DSS}	650V
$R_{DS(ON)}$	1Ω
I_D	10A

Description

AP2761 series are from Advanced Power innovated design and silicon process technology to achieve the lowest possible on-resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.
The TO-262 package is widely preferred for commercial-industrial through-hole applications and suited for low voltage applications such as DC/DC converters.



TO-262(R)

Absolute Maximum Ratings@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	650	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Drain Current, V_{GS} @ 10V	10	A
I_D@T_C=100℃	Drain Current, V_{GS} @ 10V	4.4	A
I_{DM}	Pulsed Drain Current[1]	18	A
P_D@T_C=25℃	Total Power Dissipation	104	W
	Linear Derating Factor	0.8	W/℃
I_{AR}	Avalanche Current[2]	10	A
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Maximum Thermal Resistance, Junction-case	1.2	℃/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient	62	℃/W

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=1mA	650	-	-	V
$\Delta BV_{DSS}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to 25℃, I_D=1mA	-	0.6	-	V/℃
$R_{DS(ON)}$	Static Drain-Source On-Resistance[3]	V_{GS}=10V, I_D=3.5A	-	-	1	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=3.5A	-	4.5	-	S
I_{DSS}	Drain-Source Leakage Current	V_{DS}=600V, V_{GS}=0V	-	-	10	uA
	Drain-Source Leakage Current (T_j=125°C)	V_{DS}=480V, V_{GS}=0V	-	-	100	uA
I_{GSS}	Gate-Source Leakage	V_{GS}=±30V, V_{DS}=0V	-	-	±100	nA
Q_g	Total Gate Charge[3]	I_D=10A	-	53	85	nC
Q_{gs}	Gate-Source Charge	V_{DS}=520V	-	10	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	V_{GS}=10V	-	15	-	nC
$t_{d(on)}$	Turn-on Delay Time[3]	V_{DD}=320V	-	16	-	ns
t_r	Rise Time	I_D=10A	-	20	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=10Ω	-	82	-	ns
t_f	Fall Time	V_{GS}=10V	-	36	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V	-	2750	4430	pF
C_{oss}	Output Capacitance	V_{DS}=15V	-	160	-	pF
C_{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	6	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage[3]	I_S=10A, V_{GS}=0V	-	-	1.5	V
t_{rr}	Reverse Recovery Time[3]	I_S=10A, V_{GS}=0V,	-	610	-	ns
Q_{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	8.64	-	μC

Notes:

1.Pulse width limited by Max. junction temperature.

2.Starting T_j=25°C , V_{DD}=50V , L=1.2mH , R_G=25Ω

3.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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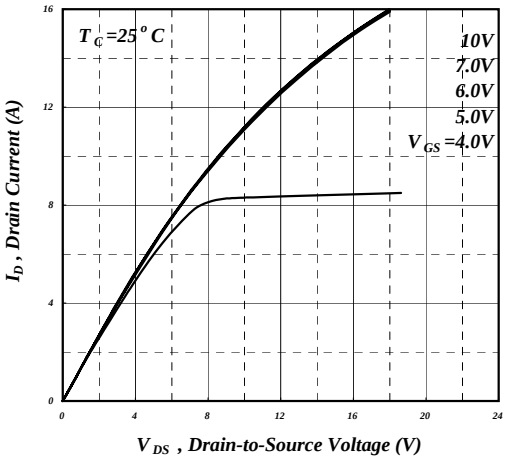


Fig 1. Typical Output Characteristics

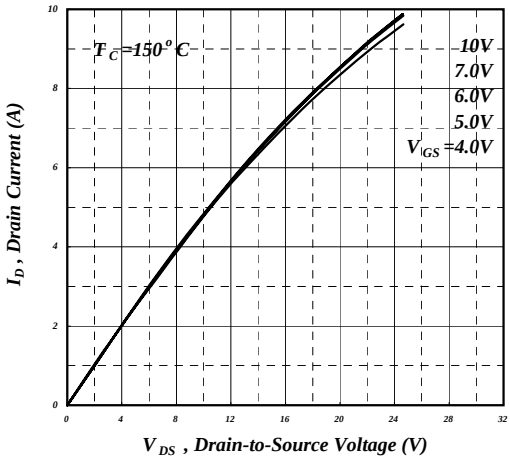


Fig 2. Typical Output Characteristics

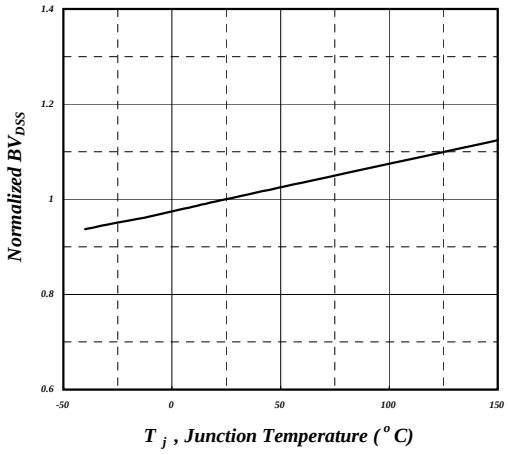


Fig 3. On-Resistance v.s. Gate Voltage

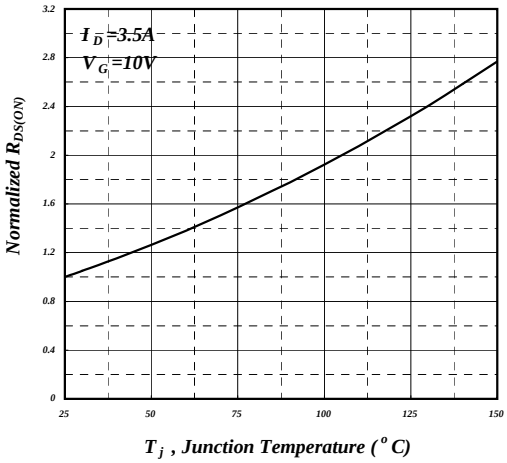


Fig 4. Normalized On-Resistance v.s. Junction Temperature

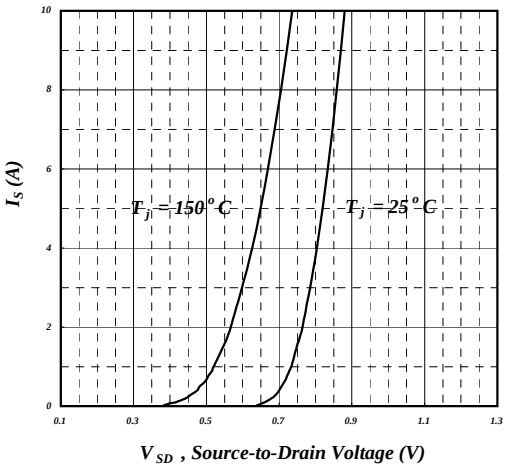


Fig 5. Forward Characteristic of Reverse Diode

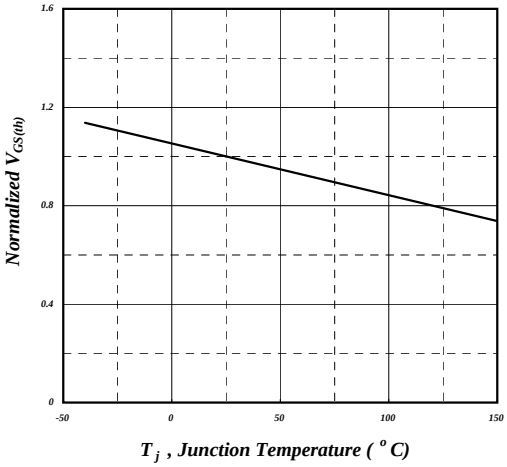


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

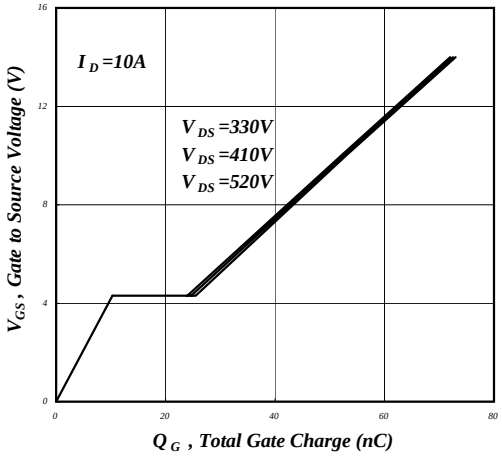


Fig 7. Gate Charge Characteristics

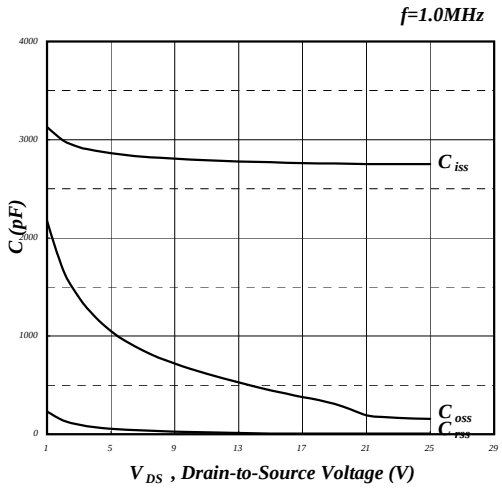


Fig 8. Typical Capacitance Characteristics

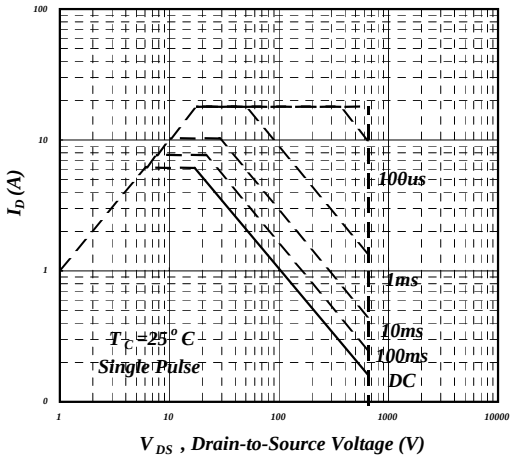


Fig 9. Maximum Safe Operating Area

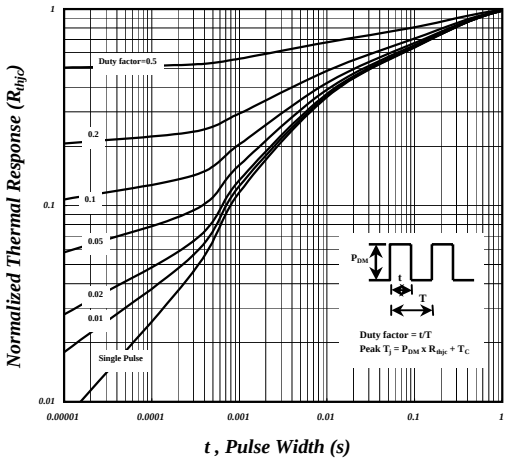


Fig 10. Effective Transient Thermal Impedance

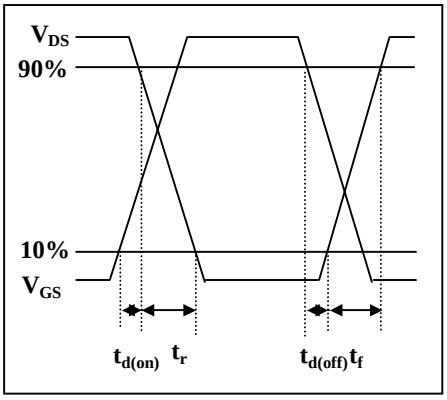


Fig 11. Switching Time Waveform

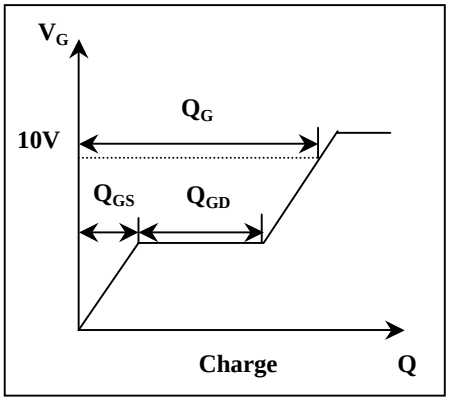


Fig 12. Gate Charge Waveform

MARKING INFORMATION

