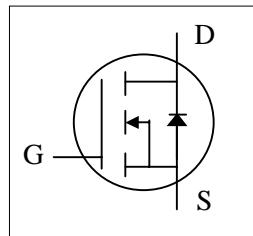




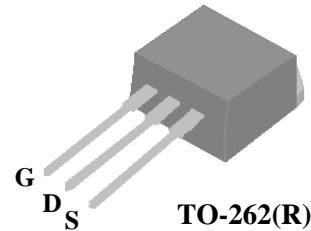
- ▼ Lower On-resistance
- ▼ Fast Switching Characteristic
- ▼ Simple Drive Requirement
- ▼ RoHS Compliant



$BV_{DSS}$	650V
$R_{DS(ON)}$	1Ω
$I_D$	10A

## Description

AP2761 series are from Advanced Power innovative 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.



## Absolute Maximum Ratings@ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	650	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D @ T_c = 25^\circ\text{C}$	Drain Current, $V_{GS} @ 10\text{V}$	10	A
$I_D @ T_c = 100^\circ\text{C}$	Drain Current, $V_{GS} @ 10\text{V}$	4.4	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	18	A
$P_D @ T_c = 25^\circ\text{C}$	Total Power Dissipation	104	W
	Linear Derating Factor	0.8	W/ $^\circ\text{C}$
$I_{AR}$	Avalanche Current <sup>2</sup>	10	A
$T_{STG}$	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	Units
$R_{thj-c}$	Maximum Thermal Resistance, Junction-case	1.2	$^\circ\text{C}/\text{W}$
$R_{thj-a}$	Maximum Thermal Resistance, Junction-ambient	62	$^\circ\text{C}/\text{W}$



# AP2761R-A-HF

## Electrical Characteristics@ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$\text{BV}_{\text{DSS}}$	Drain-Source Breakdown Voltage	$V_{\text{GS}}=0\text{V}$ , $I_D=1\text{mA}$	650	-	-	V
$\Delta \text{BV}_{\text{DSS}}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to $25^\circ\text{C}$ , $I_D=1\text{mA}$	-	0.6	-	V/ $^\circ\text{C}$
$R_{\text{DS}(\text{ON})}$	Static Drain-Source On-Resistance <sup>3</sup>	$V_{\text{GS}}=10\text{V}$ , $I_D=3.5\text{A}$	-	-	1	$\Omega$
$V_{\text{GS}(\text{th})}$	Gate Threshold Voltage	$V_{\text{DS}}=V_{\text{GS}}$ , $I_D=250\mu\text{A}$	2	-	4	V
$g_{\text{fs}}$	Forward Transconductance	$V_{\text{DS}}=10\text{V}$ , $I_D=3.5\text{A}$	-	4.5	-	S
$I_{\text{DSS}}$	Drain-Source Leakage Current	$V_{\text{DS}}=600\text{V}$ , $V_{\text{GS}}=0\text{V}$	-	-	10	$\mu\text{A}$
	Drain-Source Leakage Current ( $T_j=125^\circ\text{C}$ )	$V_{\text{DS}}=480\text{V}$ , $V_{\text{GS}}=0\text{V}$	-	-	100	$\mu\text{A}$
$I_{\text{GSS}}$	Gate-Source Leakage	$V_{\text{GS}}=\pm 30\text{V}$ , $V_{\text{DS}}=0\text{V}$	-	-	$\pm 100$	nA
$Q_g$	Total Gate Charge <sup>3</sup>	$I_D=10\text{A}$	-	53	85	nC
$Q_{\text{gs}}$	Gate-Source Charge	$V_{\text{DS}}=520\text{V}$	-	10	-	nC
$Q_{\text{gd}}$	Gate-Drain ("Miller") Charge	$V_{\text{GS}}=10\text{V}$	-	15	-	nC
$t_{\text{d}(\text{on})}$	Turn-on Delay Time <sup>3</sup>	$V_{\text{DD}}=320\text{V}$	-	16	-	ns
$t_r$	Rise Time	$I_D=10\text{A}$	-	20	-	ns
$t_{\text{d}(\text{off})}$	Turn-off Delay Time	$R_G=10\Omega$	-	82	-	ns
$t_f$	Fall Time	$V_{\text{GS}}=10\text{V}$	-	36	-	ns
$C_{\text{iss}}$	Input Capacitance	$V_{\text{GS}}=0\text{V}$	-	2750	4430	pF
$C_{\text{oss}}$	Output Capacitance	$V_{\text{DS}}=15\text{V}$	-	160	-	pF
$C_{\text{rss}}$	Reverse Transfer Capacitance	f=1.0MHz	-	6	-	pF

## Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{\text{SD}}$	Forward On Voltage <sup>3</sup>	$I_S=10\text{A}$ , $V_{\text{GS}}=0\text{V}$	-	-	1.5	V
$t_{\text{rr}}$	Reverse Recovery Time <sup>3</sup>	$I_S=10\text{A}$ , $V_{\text{GS}}=0\text{V}$ ,	-	610	-	ns
$Q_{\text{rr}}$	Reverse Recovery Charge	$dI/dt=100\text{A}/\mu\text{s}$	-	8.64	-	$\mu\text{C}$

### Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Starting  $T_j=25^\circ\text{C}$  ,  $V_{\text{DD}}=50\text{V}$  ,  $L=1.2\text{mH}$  ,  $R_G=25\Omega$
- 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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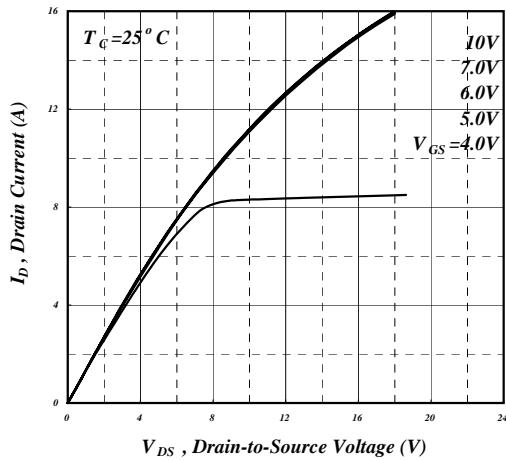


Fig 1. Typical Output Characteristics

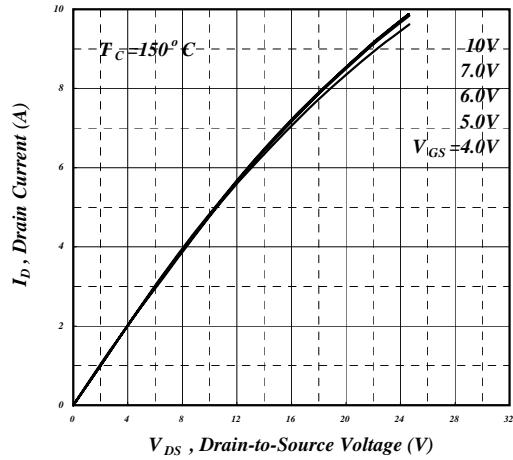


Fig 2. Typical Output Characteristics

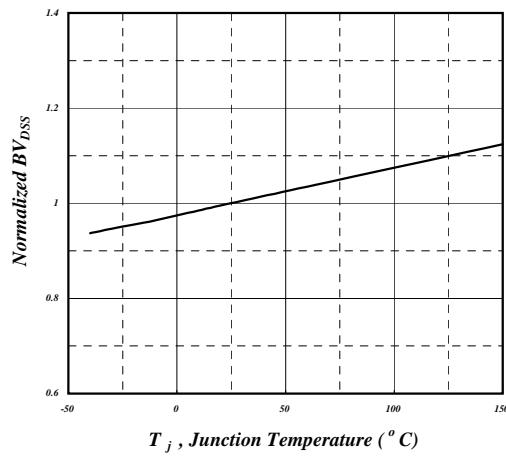


Fig 3. On-Resistance v.s. Gate Voltage

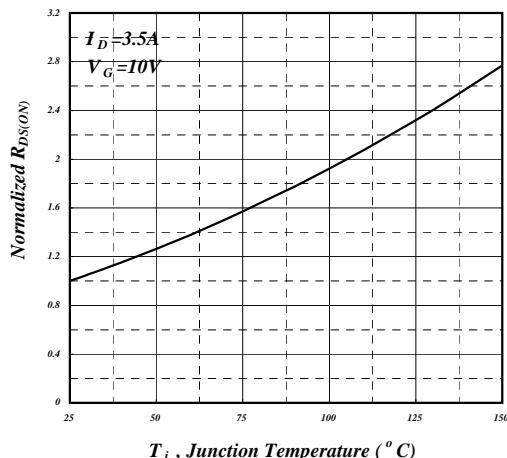


Fig 4. Normalized On-Resistance v.s. Junction Temperature

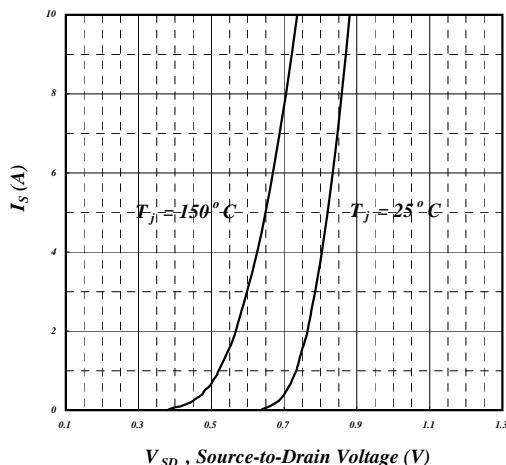


Fig 5. Forward Characteristic of Reverse Diode

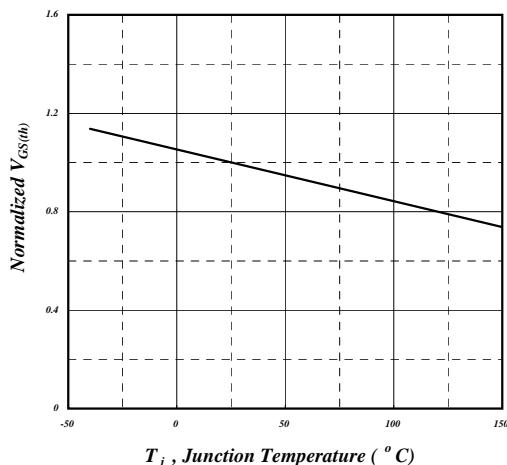
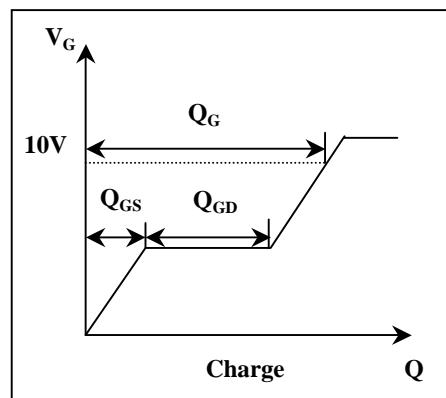
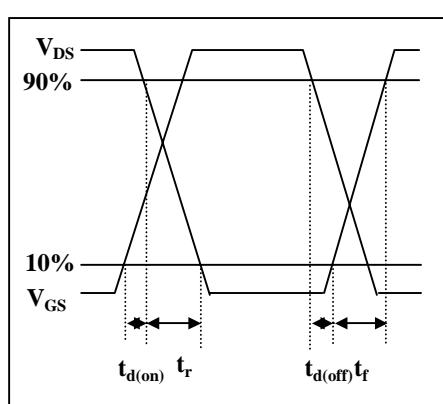
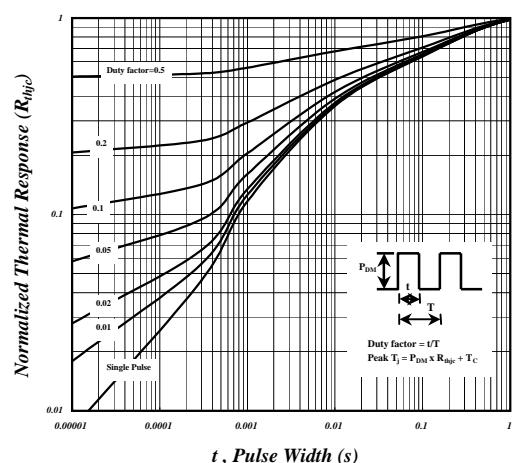
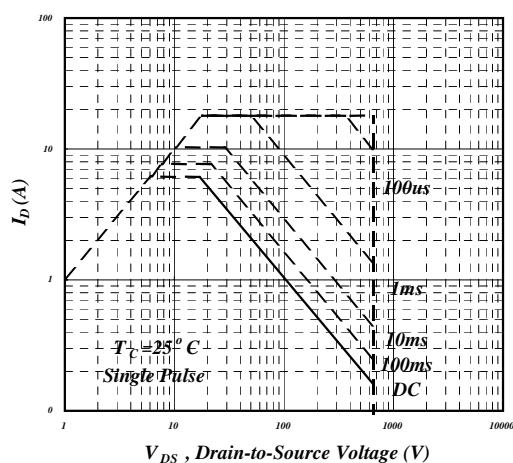
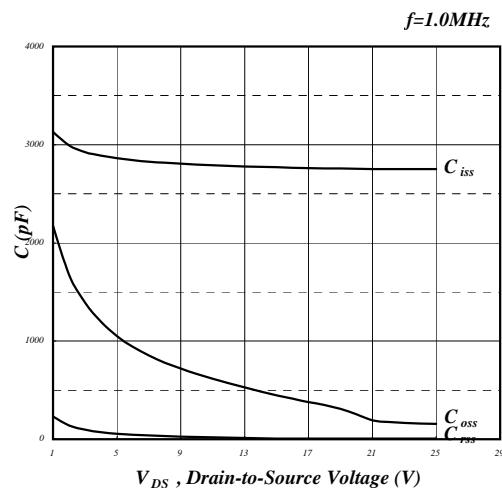
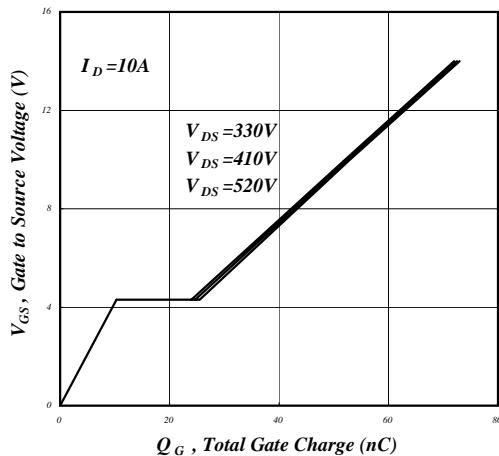


Fig 6. Gate Threshold Voltage v.s. Junction Temperature





**AP2761R-A-HF**

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## **MARKING INFORMATION**

