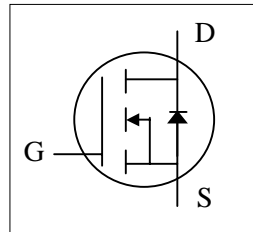
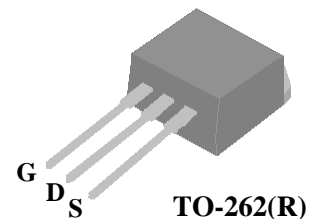




- ▼ 100% Avalanche Test
- ▼ Fast Switching Characteristics
- ▼ Simple Drive Requirement



$BV_{DSS}$	650V
$R_{DS(ON)}$	1.4 $\Omega$
$I_D$	7A



## Description

AP2762 series are specially designed as main switching devices for universal 90~265VAC off-line AC/DC converter applications.

The TO-262 package is widely preferred for commercial-industrial applications. The device is suited for switch mode power supplies, DC-AC converters and high current high speed switching circuits.

## Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	650	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	7	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	24	A
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	92.6	W
$E_{AS}$	Single Pulse Avalanche Energy <sup>2</sup>	18	mJ
$I_{AR}$	Avalanche Current	6	A
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

## Thermal Data

Symbol	Parameter	Value	Unit
Rthj-c	Maximum Thermal Resistance, Junction-case	1.35	$^\circ C/W$
Rthj-a	Maximum Thermal Resistance, Junction-ambient	62	$^\circ C/W$



**Electrical Characteristics @ $T_j=25^{\circ}\text{C}$ (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
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>3</sup>	$V_{GS}=10V, I_D=3A$	-	-	1.4	$\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	4	V
$g_{fs}$	Forward Transconductance	$V_{DS}=10V, I_D=4A$	-	3.5	-	S
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=480V, V_{GS}=0V$	-	-	100	$\mu A$
$I_{GSS}$	Gate-Source Leakage	$V_{GS}=\pm 30V$	-	-	$\pm 100$	nA
$Q_g$	Total Gate Charge <sup>3</sup>	$I_D=6A$	-	31	50	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=200V$	-	7	-	nC
$Q_{gd}$	Gate-Drain ("Miller") Charge	$V_{GS}=10V$	-	13	-	nC
$t_{d(on)}$	Turn-on Delay Time <sup>3</sup>	$V_{DD}=200V$	-	33	-	ns
$t_r$	Rise Time	$I_D=3A$	-	29	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=50\Omega, V_{GS}=10V$	-	186	-	ns
$t_f$	Fall Time	$R_D=67\Omega$	-	46	-	ns
$C_{iss}$	Input Capacitance	$V_{GS}=0V$	-	1330	2130	pF
$C_{oss}$	Output Capacitance	$V_{DS}=30V$	-	100	-	pF
$C_{rss}$	Reverse Transfer Capacitance	$f=1.0MHz$	-	8	-	pF

**Source-Drain Diode**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{SD}$	Forward On Voltage <sup>3</sup>	$I_S=6A, V_{GS}=0V$	-	-	1.5	V
$t_{rr}$	Reverse Recovery Time <sup>3</sup>	$I_S=6A, V_{GS}=0V,$	-	475	-	ns
$Q_{rr}$	Reverse Recovery Charge	$di/dt=100A/\mu s$	-	6.4	-	$\mu C$

**Notes:**

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

THIS PRODUCT IS AN ELECTROSTATIC SENSITIVE, PLEASE HANDLE WITH CAUTION.

THIS PRODUCT HAS BEEN QUALIFIED FOR CONSUMER MARKET. APPLICATIONS OR USES AS CRITERIAL COMPONENT IN LIFE SUPPORT DEVICE OR SYSTEM ARE NOT AUTHORIZED.

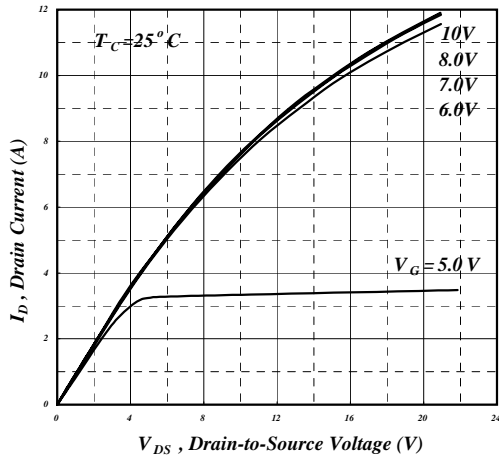


Fig 1. Typical Output Characteristics

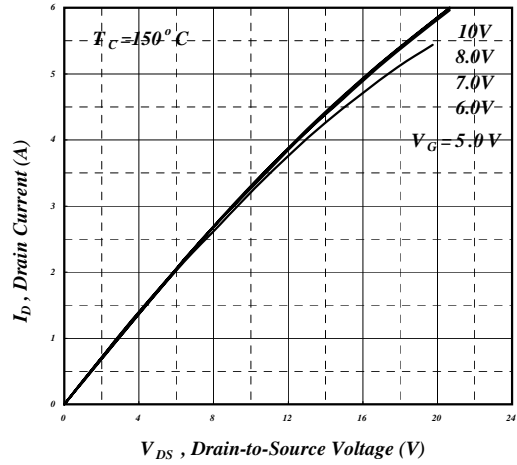


Fig 2. Typical Output Characteristics

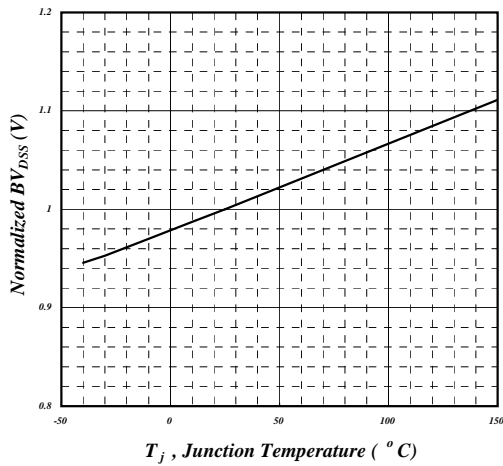


Fig 3. Normalized  $BV_{DSS}$  v.s. Junction Temperature

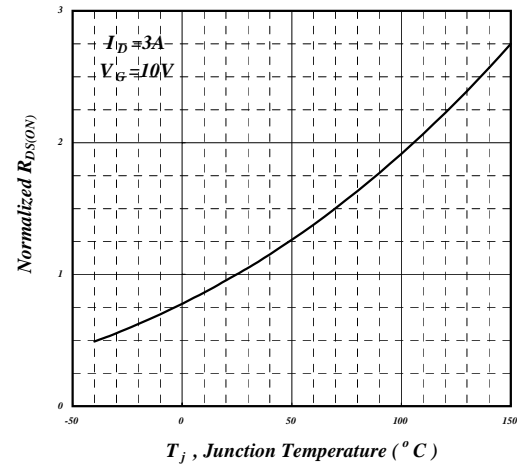


Fig 4. Normalized On-Resistance v.s. Junction Temperature

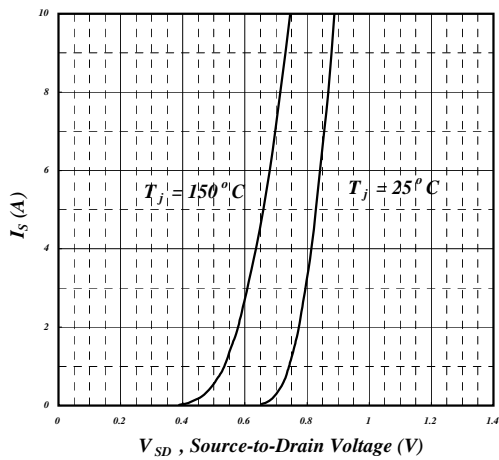


Fig 5. Forward Characteristic of Reverse Diode

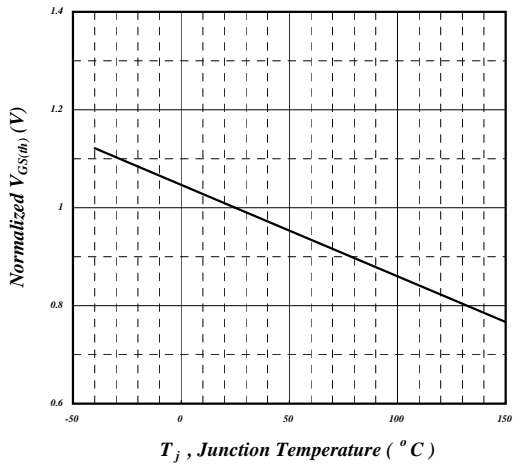


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

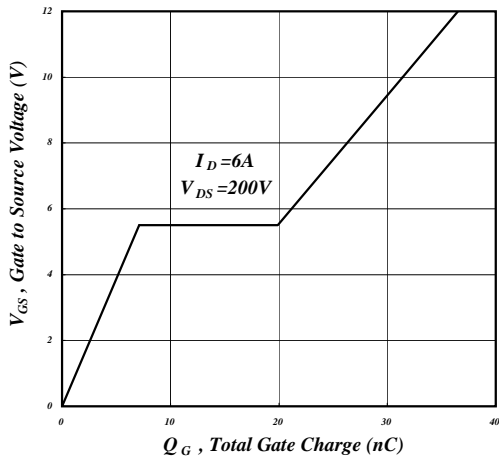


Fig 7. Gate Charge Characteristics

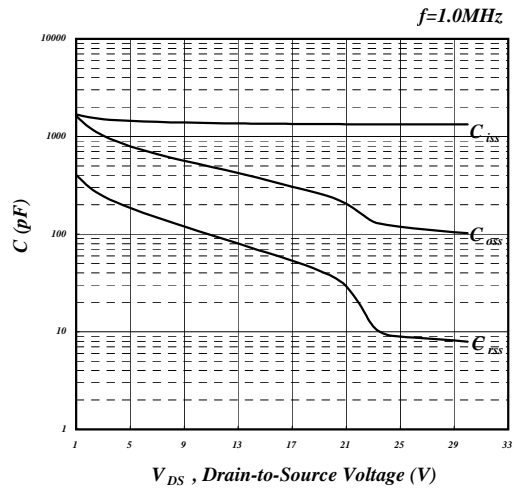


Fig 8. Typical Capacitance Characteristics

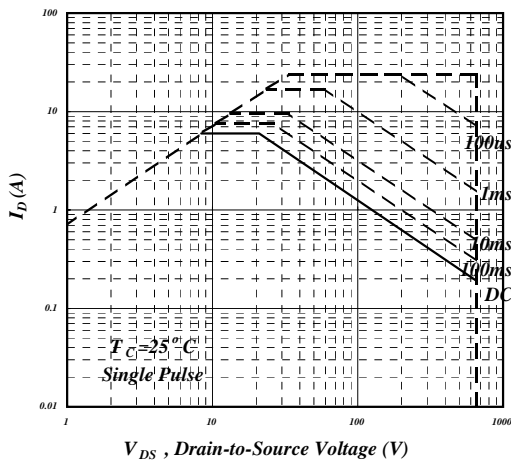


Fig 9. Maximum Safe Operating Area

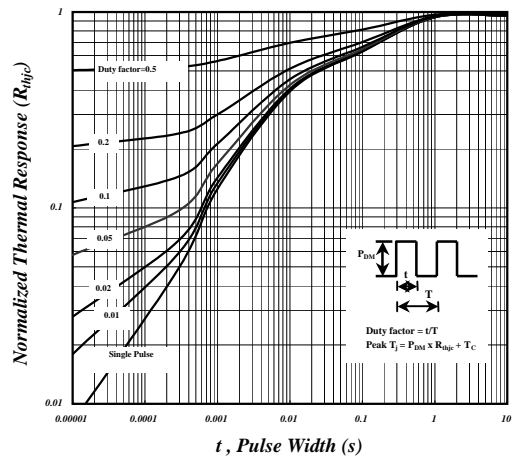


Fig 10. Effective Transient Thermal Impedance

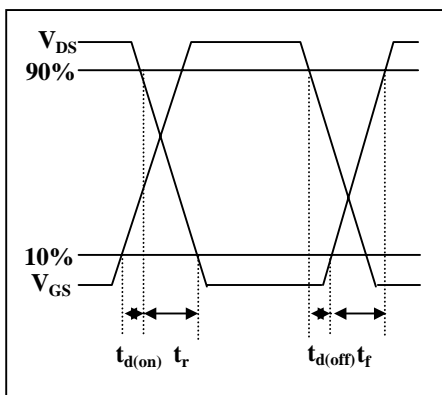


Fig 11. Switching Time Waveform

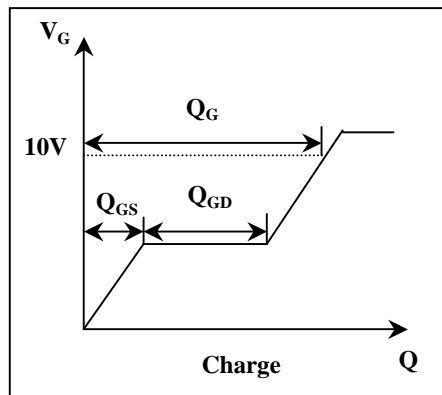
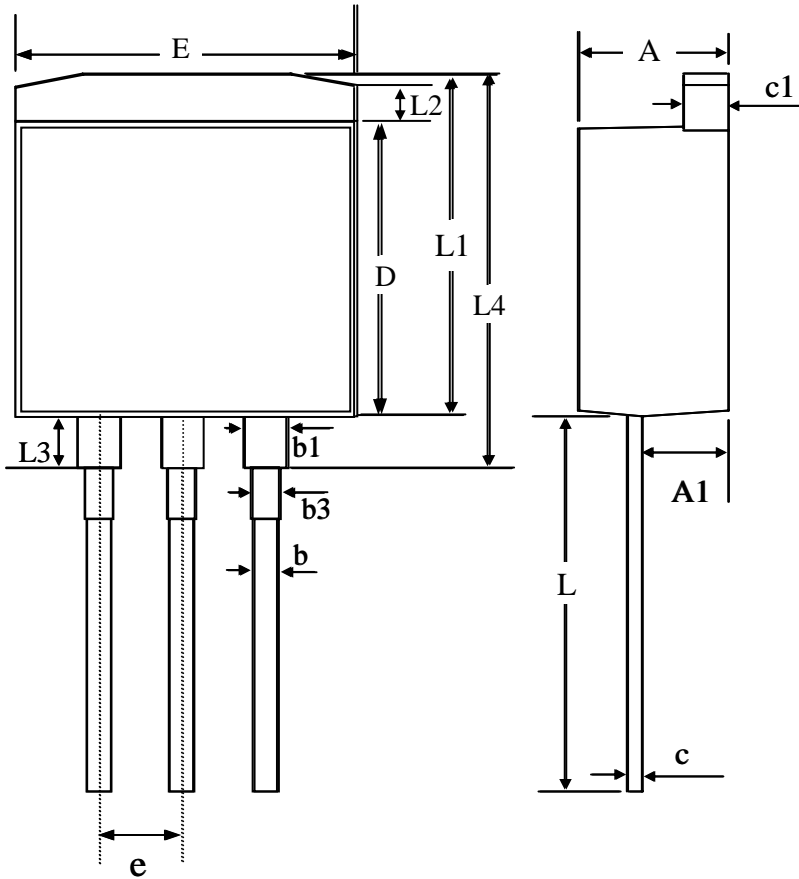


Fig 12. Gate Charge Waveform



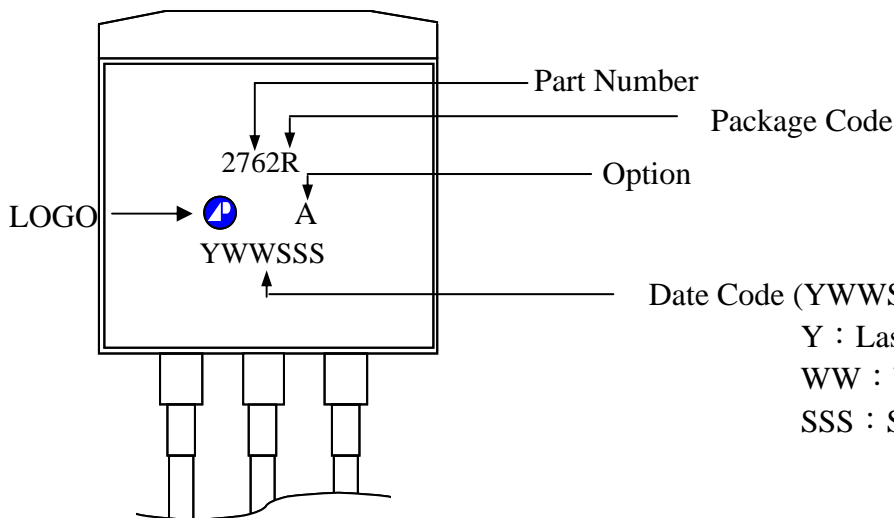
### Package Outline : TO-262



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	4.24	4.44	4.64
A1	-----	-----	2.70
b	0.66	0.76	0.86
b1	1.07	1.27	1.47
b3	0.76	0.86	1.06
c	0.30	0.40	0.50
c1	1.15	1.30	1.45
D	8.30	8.60	8.90
E	9.90	10.20	10.50
e	2.04	2.54	3.04
L	10.50	11.00	11.50
L1	9.50	10.00	10.30
L3	----	1.30	----
L4	10.80	11.30	11.35

- 1.All Dimensions Are in Millimeters.
- 2.Dimension Does Not Include Mold Protrusions.

### Part Marking Information & Packing : TO-262



Date Code (YWWSSS)  
 Y : Last Digit Of The Year  
 WW : Week  
 SSS : Sequence