

## 60V N-Channel Enhancement Mode MOSFET

### 1. Product Information

#### 1.1 Features

- ◇ Surface-mounted package
- ◇ Advanced SGT cell design

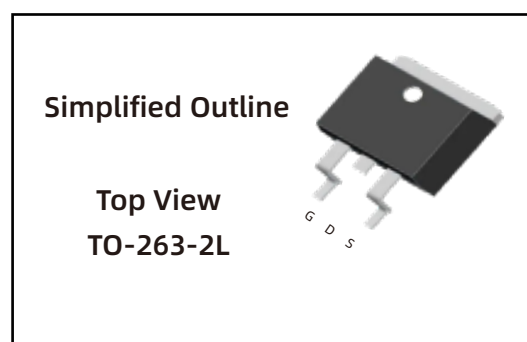
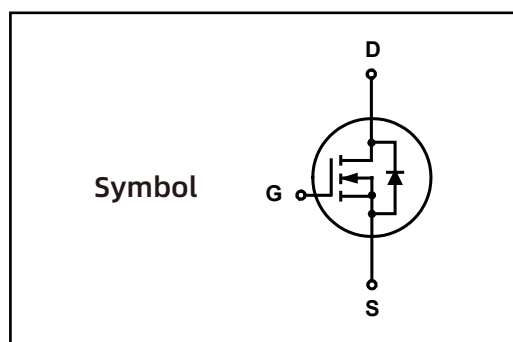
#### 1.2 Applications

- ◇ LCD TV appliances
- ◇ LCDM appliances
- ◇ High power inverter system

#### 1.3 Quick reference

- ◇  $BV \cong 60\text{ V}$
- ◇  $P_{\text{tot}} \cong 156\text{ W}$
- ◇  $I_D \cong 80\text{ A}$
- ◇  $R_{\text{DS(ON)}} \cong 5.5\text{ m}\Omega @ V_{\text{GS}} = 10\text{ V}$
- ◇  $R_{\text{DS(ON)}} \cong 9.7\text{ m}\Omega @ V_{\text{GS}} = 6\text{ V}$

### 2. Pin Description



### 3. Marking Information

Product Name	Marking
LN048N060K-H	LN048N060K-H CYWWZZ XXXXXX

## 4.Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{DS}$	Drain-Source Voltage	$T_c = 25\text{ }^\circ\text{C}$	60	-	V
$V_{GS}$	Gate-Source Voltage	$T_c = 25\text{ }^\circ\text{C}$	-	$\pm 20$	V
$I_D^{***}$	Drain Current ( DC )	$T_c = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	80	A
		$T_c = 100\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	60	A
$I_{DM}^{*,***}$	Drain Current ( Pulsed )	$T_c = 25\text{ }^\circ\text{C}, V_{GS} = 10\text{ V}$	-	144	A
$P_{tot}$	Drain power dissipation	$T_c = 25\text{ }^\circ\text{C}$	-	156	W
$T_{stg}$	Storage Temperature		-55	150	$^\circ\text{C}$
$T_j$	Junction Temperature		-	150	$^\circ\text{C}$
$I_s$	Continuous-Source Current	$T_c = 25\text{ }^\circ\text{C}$	-	80	A
$R_{\theta JA}^{**}$	Thermal Resistance- Junction to Ambient		-	62.5	$^\circ\text{C/W}$
$R_{\theta JC}^{**}$	Thermal Resistance- Junction to Case		-	0.8	

Notes :

- \* Pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$
- \*\* Mounted on Large Heat Sink
- \*\*\* limited by bonding wire

## 5.Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
LN048N060K-H	T0263			800	

Note: COMTECH defines " Green " as lead-free ( RoHS compliant ) and halogen free ( Br or Cl does not exceed 900 ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500 ppm by weight; Follow IEC 61249-2-21 and IPC / JEDEC J-STD-020C )

## 6. Electrical Characteristics (TA=25 ° Unless Otherwise Noted )

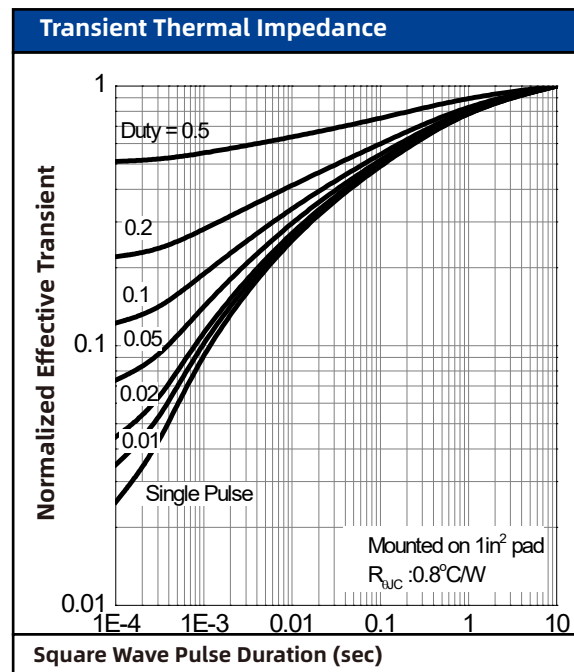
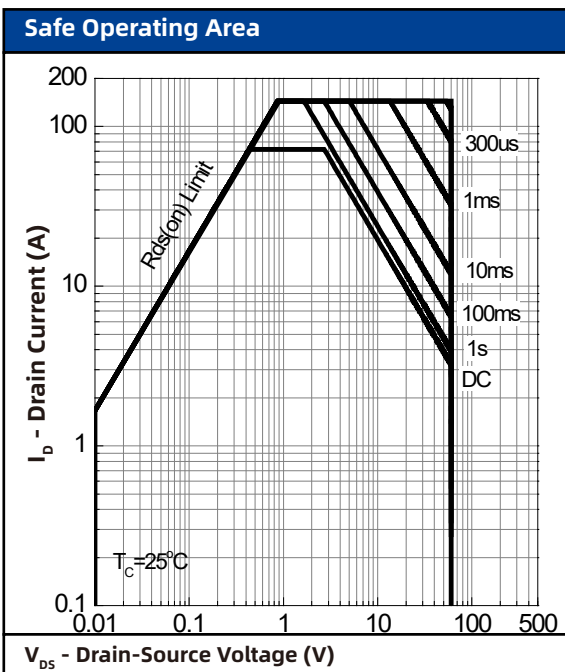
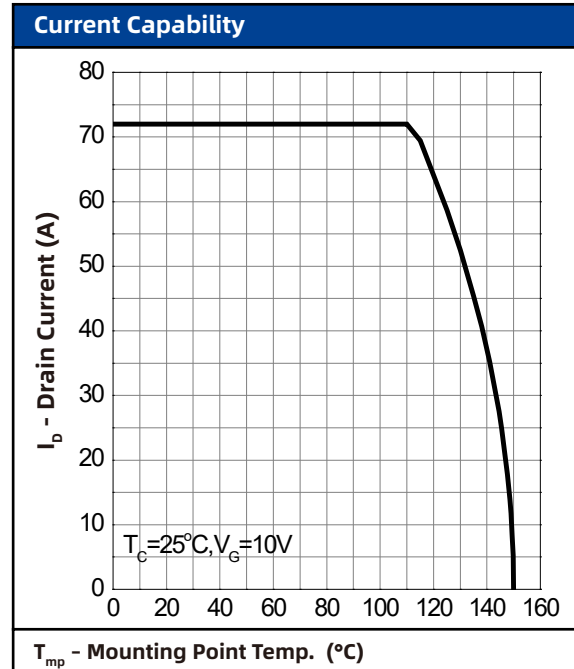
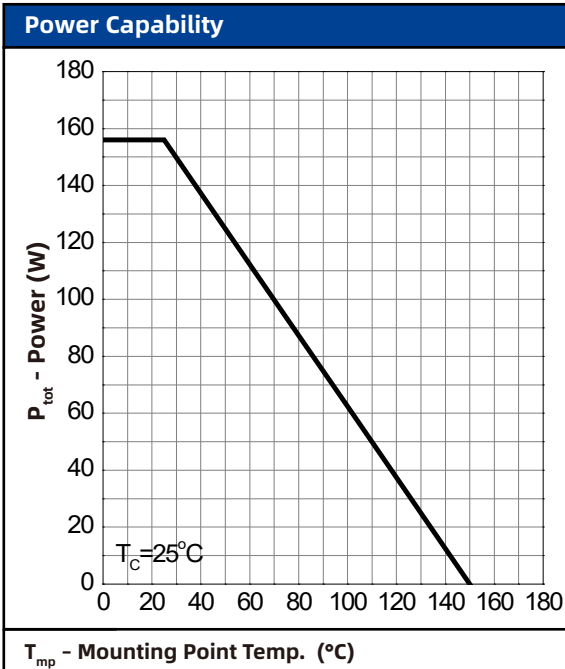
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_{DS} = 250\ \mu\text{A}$	60	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = 250\ \mu\text{A}$	2.0	-	4.0	V
$I_{DSS}$	Drain Leakage Current	$V_{DS} = 48\text{ V}, V_{GS} = 0\text{ V}$	-	-	1	$\mu\text{A}$
$I_{GSS}$	Gate Leakage Current	$V_{GS} = 0\text{ V}, V_{DS} = \pm 20\text{ V}$	-	-	$\pm 100$	nA
$R_{DS(ON)}^a$	On-State Resistance	$V_{GS} = 10\text{ V}, I_{DS} = 20\text{ A}$	-	4.8	5.5	m $\Omega$
		$V_{GS} = 6\text{ V}, I_{DS} = 10\text{ A}$	-	7.5	9.7	
<b>Diode Characteristics</b>						
$V_{SD}^a$	Diode Forward Voltage	$I_{SD} = 20\text{ A}, V_{GS} = 0\text{ V}$	-	-	1.3	V
$t_{rr}$	Reverse Recovery Time	$I_{SD} = 20\text{ A}, V_{GS} = 0\text{ V}$	-	63	-	nS
$Q_{rr}$	Reverse Recovery Charge	$dI_{SD}/dt = 100\text{ A}/\mu\text{s}$	-	63	-	nC
<b>Dynamic Characteristics<sup>b</sup></b>						
$C_{ISS}$	Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 30\text{ V}$ Frequency = 1 MHz	-	2094	-	pF
$C_{OSS}$	Output Capacitance		-	730	-	
$C_{rSS}$	Reverse Transfer Capacitance		-	48	-	
$t_d(on)$	Turn-on Delay Time	$V_{DS} = 30\text{ V}, V_{GEN} = 10\text{ V},$ $R_G = 4.5\ \Omega, R_L = 1.5\ \Omega,$ $I_{DS} = 20\text{ A}$	-	15	-	nS
$t_r$	Turn-on Rise Time		-	44	-	
$t_d(off)$	Turn-off Delay Time		-	27	-	
$t_f$	Turn-off Fall Time		-	40	-	
<b>Gate Charge Characteristics<sup>b</sup></b>						
$Q_g$	Total Gate Charge	$V_{DS} = 30\text{ V}, V_{GS} = 10\text{ V},$ $I_{DS} = 20\text{ A}$	-	36	-	nC
$Q_{gs}$	Gate-Source Charge		-	11	-	
$Q_{gd}$	Gate-Drain Charge		-	9	-	

Notes :

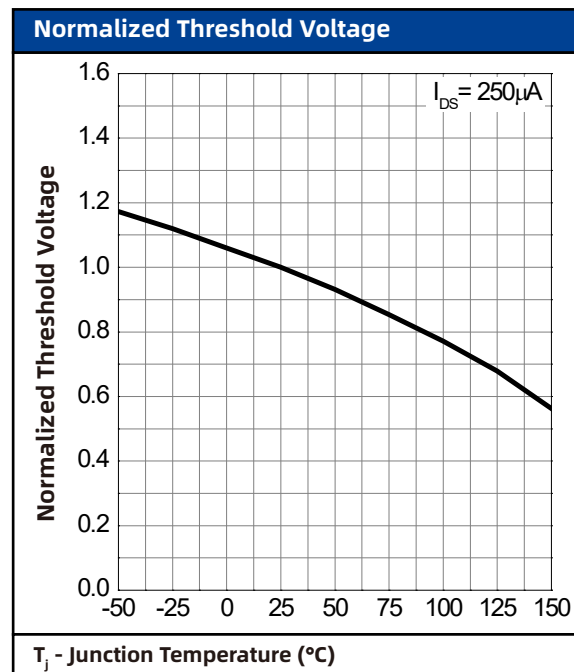
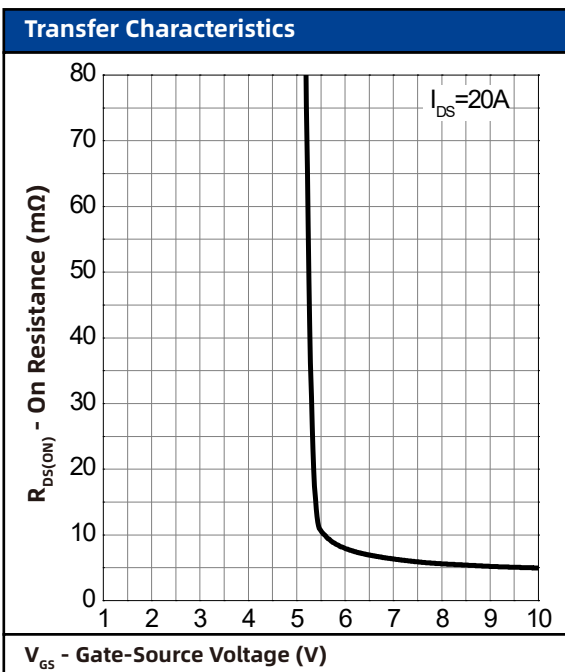
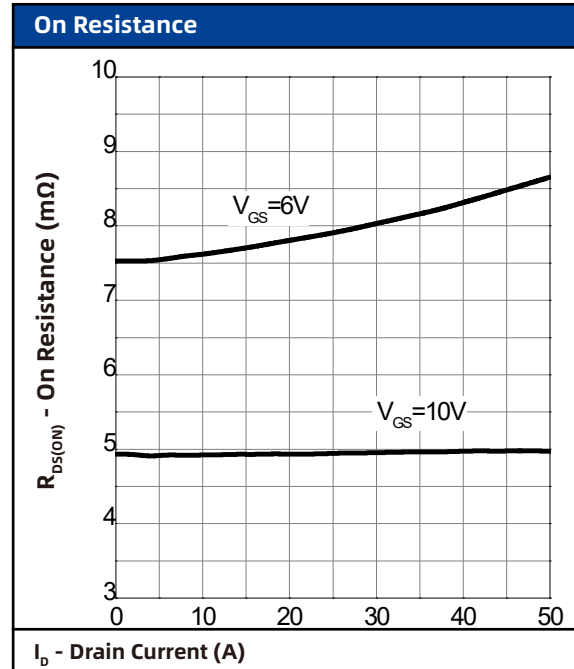
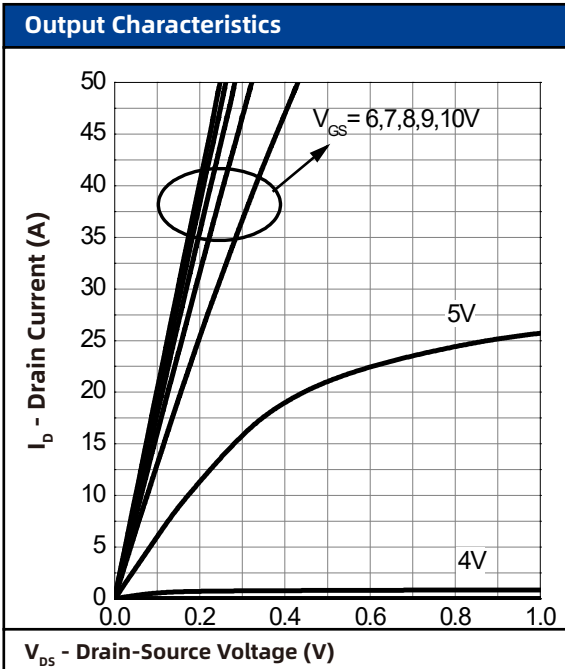
a : Pulse test ; pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$

b : Guaranteed by design, not subject to production testing

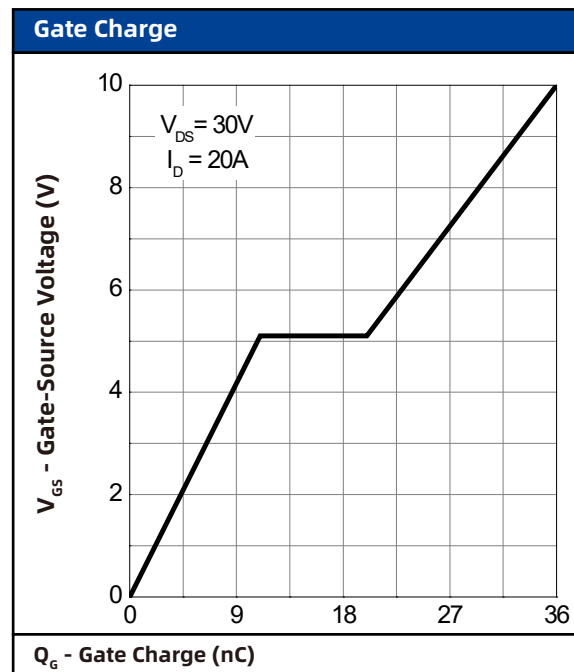
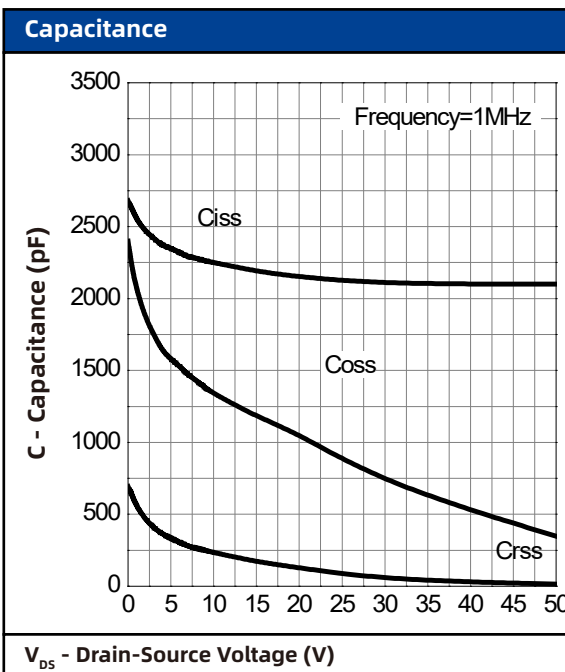
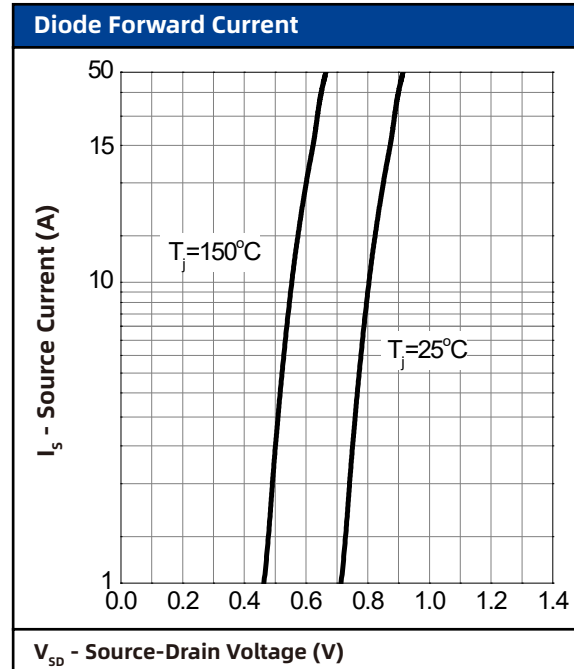
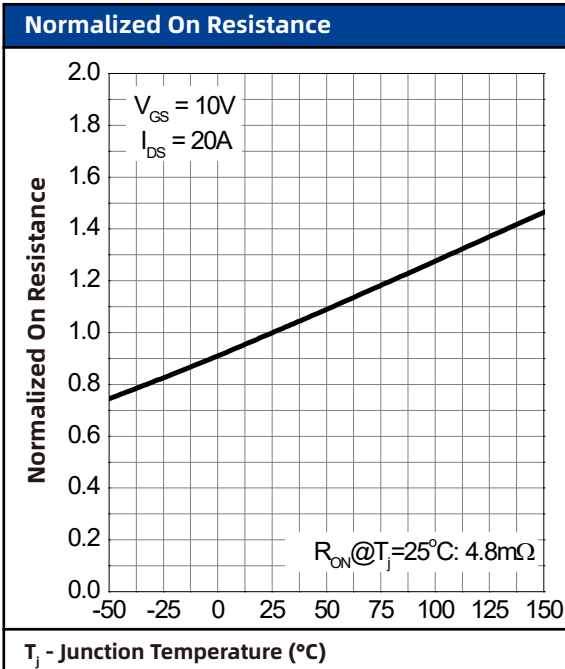
## 7. Typical Characteristics



## 7. Typical Characteristics (cont.)

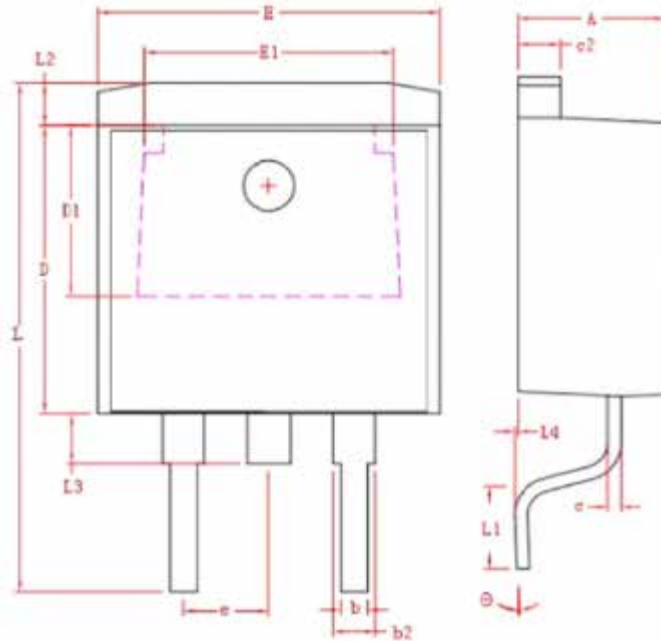


## 7. Typical Characteristics (cont.)



## 8. Package Dimensions

### T0263-2L



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	4.40	4.80
b	0.76	1.00
L4	0.00	0.25
C	0.36	0.50
L3	1.50 REF	
L1	2.29	2.79
E	9.80	10.40
E1	7.40 REF	
c2	1.25	1.45
b2	1.17	1.47
D	8.60	9.00
D1	5.10 REF	
e	2.54 REF	
L	14.6	15.8
θ	0° ± 3°	
L2	1.27 REF	