

Descriptions

These N-channel MOSFET are produced using advanced plane MOSFET Technology, which provides Low on-state resistance, high switching performance and excellent quality.

These devices are suitable device for SMPS, high Speed switching and general purpose applications.

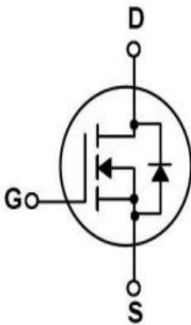
Features

- $V_{DS} = 600V$
- $I_D = 2A @ V_{GS} = 10V$
- $R_{DS(ON)} (Typ) = 4.0\Omega @ V_{GS} = 10V$

Applications

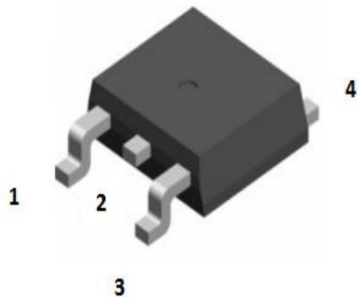
- Power Supply
- PFC
- High Current, High Speed Switching

Equivalent Circuit



Pinning

TO-252



PIN1:Gate PIN 2:Drain PIN 3:Source PIN 4:Drain

Absolute Maximum Ratings($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	600	V
Drain Current	$I_{\text{D}}(T_c=25^{\circ}\text{C})$	2.0	A
Drain Current	$I_{\text{D}}(T_c=100^{\circ}\text{C})$	1.3	A
Drain Current - Pulsed	I_{DM}	6.0	A
Gate-Source Voltage	V_{GSS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	120	mJ
Avalanche Current	I_{AR}	2.0	A
Power Dissipation	$P_{\text{D}}(T_c=25^{\circ}\text{C})$	44	W
Operating and Storage Temperature Range	$T_{\text{J}}, T_{\text{STG}}$	-55 to 150	$^{\circ}\text{C}$
Thermal Resistance Junction-case	R_{thJC}	2.87	$^{\circ}\text{C/W}$
Thermal Resistance Junction-ambient	R_{thJA}	110.0	$^{\circ}\text{C/W}$

Electrical Characteristics($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{\text{GS}}=0\text{V}$ $I_{\text{D}}=250\mu\text{A}$	600			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=600\text{V}$ $V_{\text{GS}}=0\text{V}$			1.0	μA
		$V_{\text{DS}}=480\text{V}$ $T_c=125^{\circ}\text{C}$			100	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{\text{GS}}=\pm 30\text{V}$ $V_{\text{DS}}=0\text{V}$			± 0.1	μA
Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}}=V_{\text{GS}}$ $I_{\text{D}}=250\mu\text{A}$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{\text{DS(on)}}$	$V_{\text{GS}}=10\text{V}$ $I_{\text{D}}=1.0\text{A}$		4.0	5.0	Ω
Forward Transconductance	g_{FS}	$V_{\text{DS}}=40\text{V}$ $I_{\text{D}}=1.0\text{A}$		2.05		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{\text{GS}}=0\text{V}$ $I_{\text{S}}=2.0\text{A}$			1.4	V

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		278		pF
Output Capacitance	C_{oss}			20		pF
Reverse Transfer Capacitance	C_{rss}			5		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V$ $I_D=2.0A$ $R_G=25\Omega$		8.0	30	ns
Turn-On Rise Time	t_r			23	60	ns
Turn-Off Delay Time	$t_{d(off)}$			25	60	ns
Turn-Off Fall Time	t_f			28	70	ns
Total Gate Charge	Q_g	$I_D = 2.0A$, $V_{DS} = 480V$ $V_{GS} = 10V$		6.6		nC
Gate-to-Source Charge	Q_{gs}			1.4		nC
Gate-to-Drain Charge	Q_{gd}			2.0		nC
Continuous Diode Forward Current	I_s				2.0	A
Reverse Recovery Time	t_{rr}	$T_j=25^\circ C$, $I_f=2.0A$ $di/dt=100A/\mu s$		380		nS
Reverse Recovery Charge	Q_{rr}			0.9		uC

Electrical Characteristic Curve

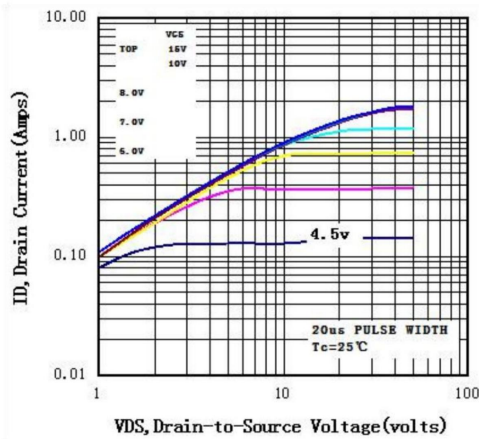


Fig1 Typical Output Characteristics, Tc=25°C

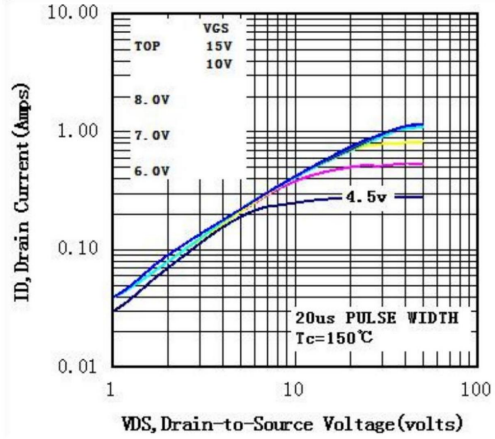


Fig2 Typical Output Characteristics, Tc=150°C

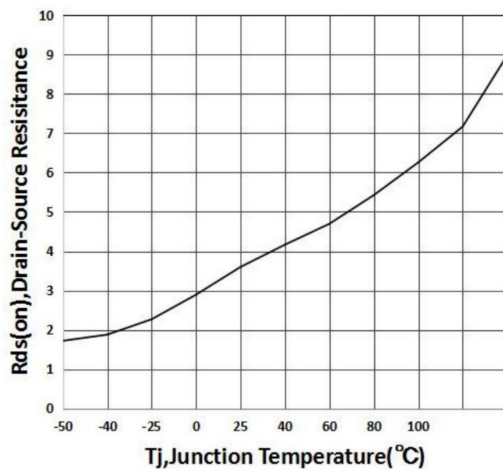


Fig3 Normalized Resistance Vs. Temperature

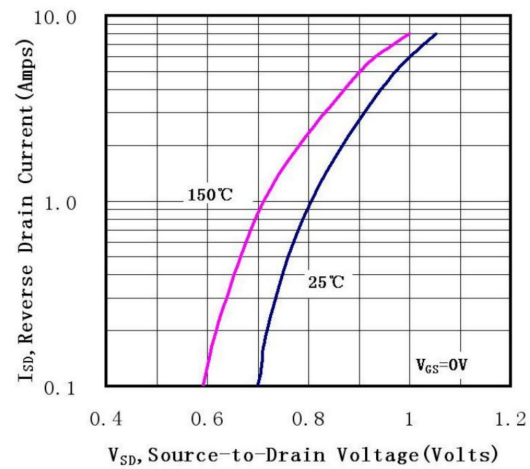


Fig4 Typical Source-Drain Diode Forward Voltage

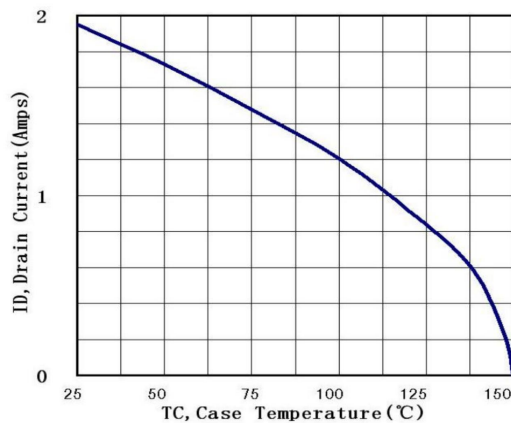


Fig5 Maximum Drain Current Vs. Case Temperature

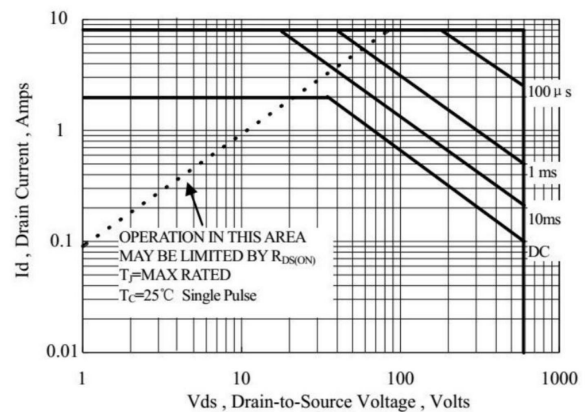
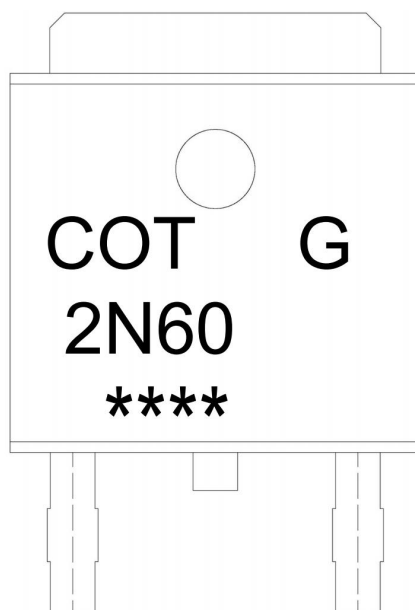


Fig6 Maximum Safe Operating Area

Marking Instructions



Note:

COT: Company Logo

G: Halogen Free

2N60: Product Type.

****: Lot No. Code, code change with Lot No.

Packaging SPEC.

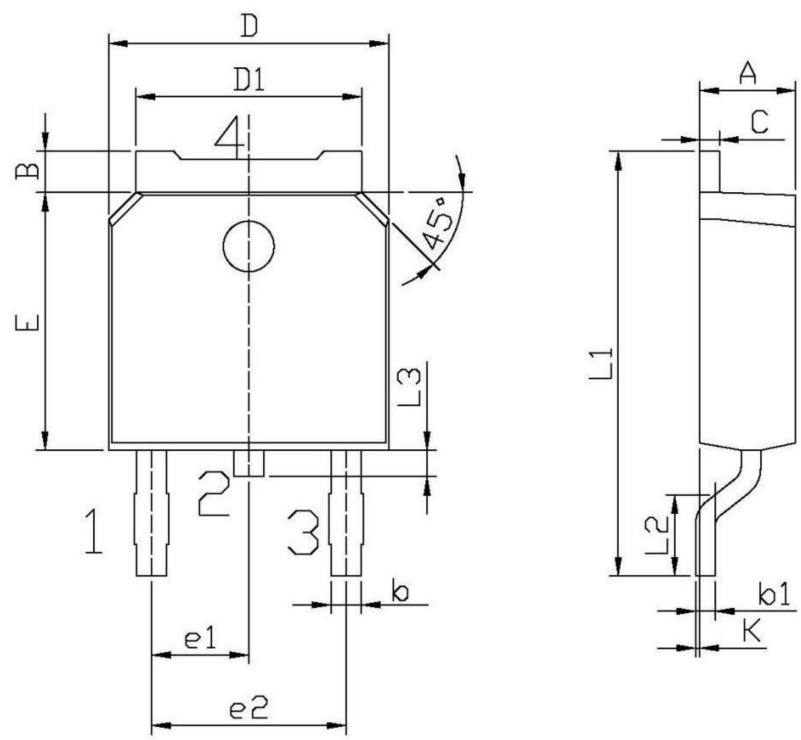
REEL INFORMATION

Package Type	Units					Dimension		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel unit: mm	Inner Box unit: mm ³	Outer Box unit: mm ³
TO-252	2,500	2	5,000	5	25,000	13" ×16	360×360×50	385×257×392

TUBE INFORMATION

Package Type	Units					Dimension		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube unit: mm ³	Inner Box unit: mm ³	Outer Box unit: mm ³
TO-252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

Package Outline Dimensions



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

T0-252