

/ Descriptions

N TO-252

N-CHANNEL MOSFET in a TO-252 Plastic Package.

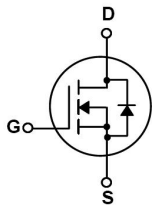
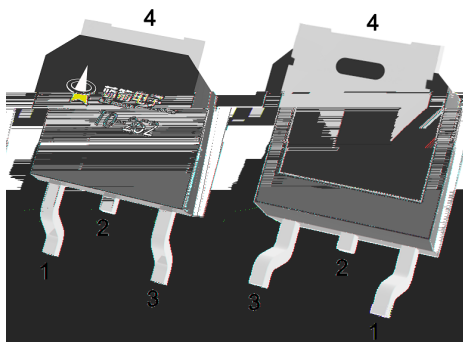
/ Features $V_{DS}(V) = 150V$ $I_D = 20.5A$ $R_{DS(ON)}@10V \leq 75m\Omega$ (Typ. $65m\Omega$) $R_{DS(ON)}@6V \leq 120m\Omega$ (Typ. $79m\Omega$)

HF Product.

/ Applications

OHG

LED backlighting, Ideal for high-frequency switching and synchronous rectification.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	150	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	20.5	A
Peak Drain Current	I_{DM}	68	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	67	mJ
Avalanche Current	I_{AS}	13.4	A
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	70	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	75	/W
Thermal Resistance-Junction to Case	$R_{\theta JC}$	1.8	

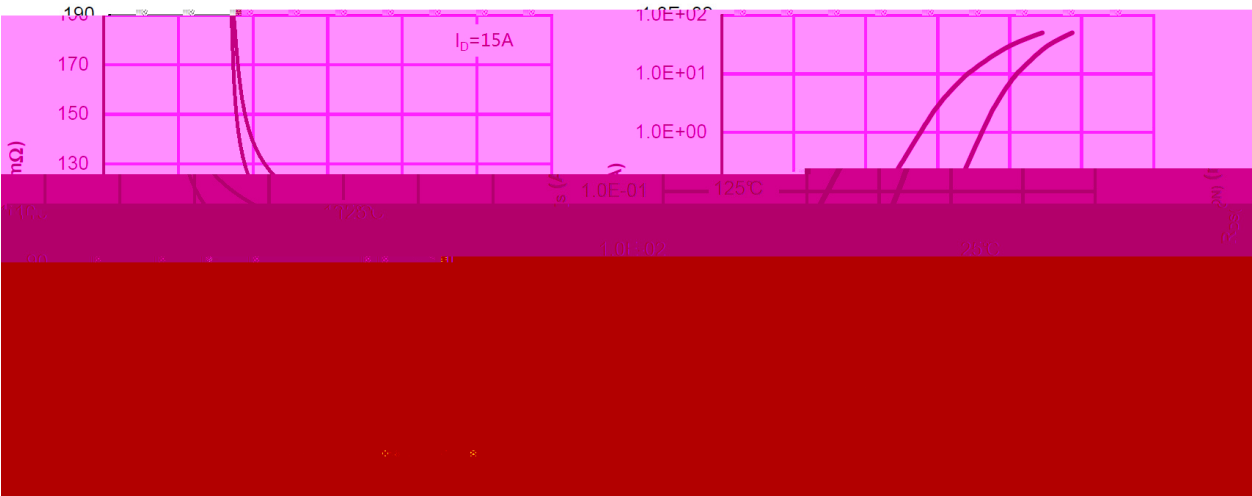
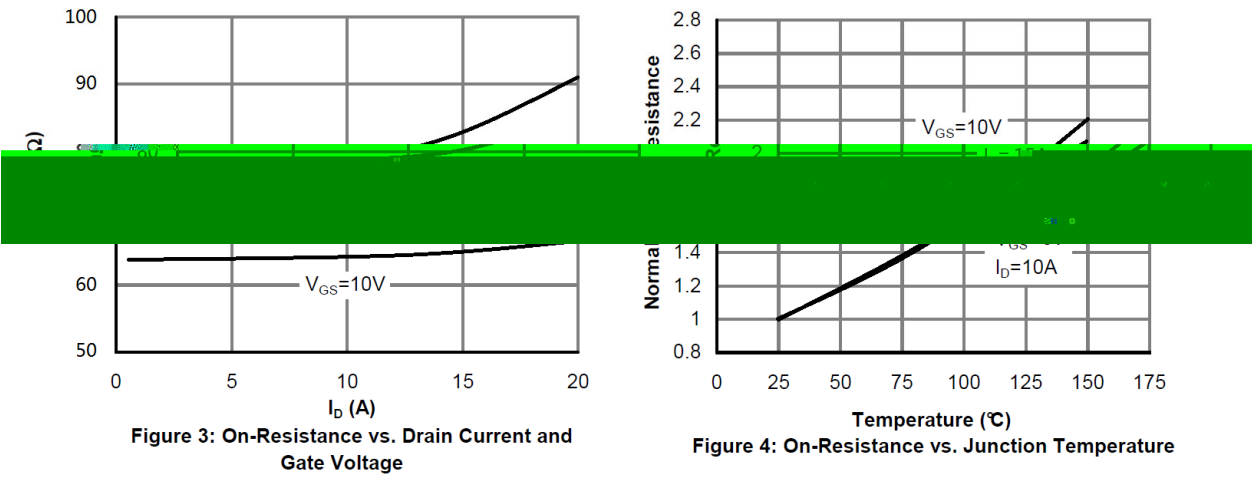
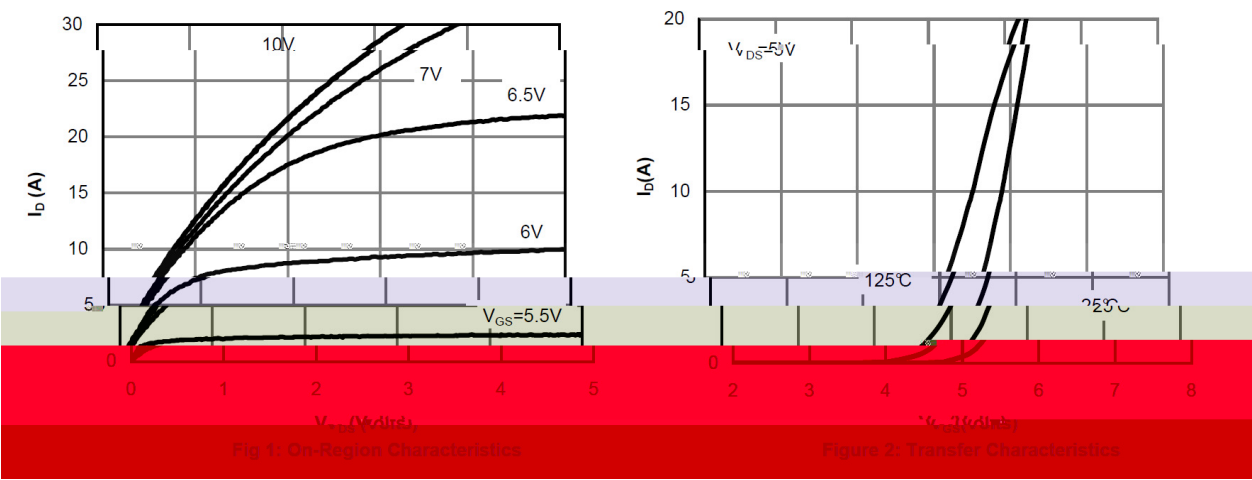
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	150	167		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=150V$ $V_{GS}=0V$			1	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=15A$		65	75	m Ω
		$V_{GS}=6V$ $I_D=10A$		79	120	
Diode Forward Voltage	V_{SD}	$I_S=1A$ $V_{GS}=0V$			1.2	V
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=25V$, $f=1.0MHz$		390		pF
Output Capacitance	C_{oss}			235		
Reverse Transfer Capacitance	C_{rss}			12		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.9		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=75V$, $I_D=10A$		5.2		nC
Total Gate Charge	$Q_{g(6V)}$			2.9		
Gate Source Charge	Q_{gs}			1.1		
Gate Drain Charge	Q_{gd}			1.4		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On DelayTime	$t_{D(on)}$	$V_{DS}=75V$ $I_D=10A$ $V_{GS}=10V$ $R_G=3\Omega$		5.7		ns
Turn-On Rise Time	t_r			2.9		
Turn-Off DelayTime	$t_{D(off)}$			6.9		
Turn-Off Fall Time	t_f			3.3		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

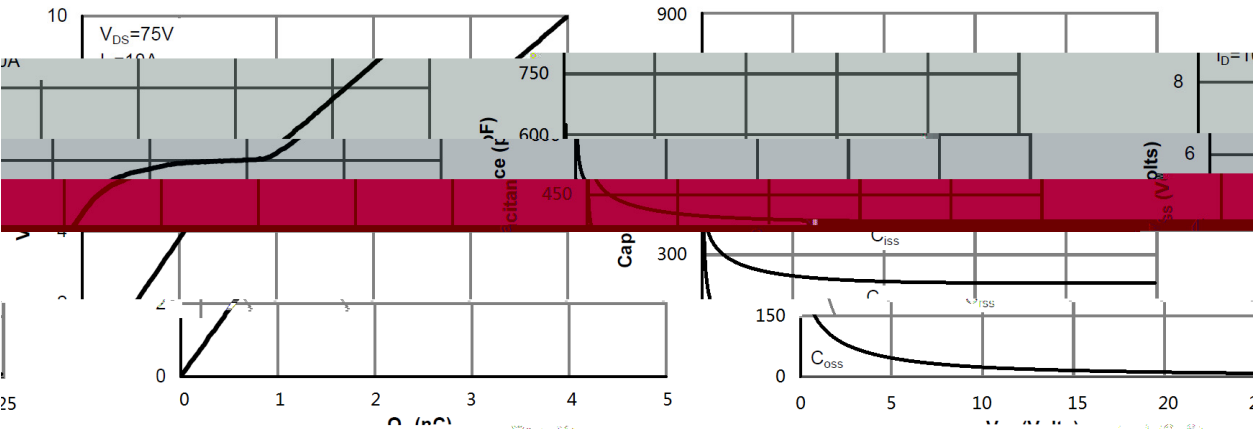


Figure 7: Gate-Charge Characteristics

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

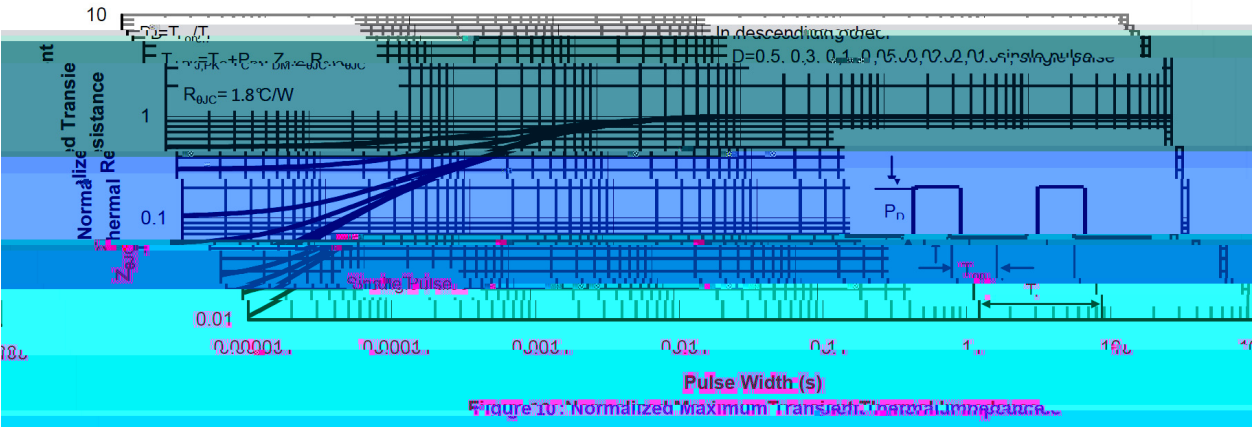
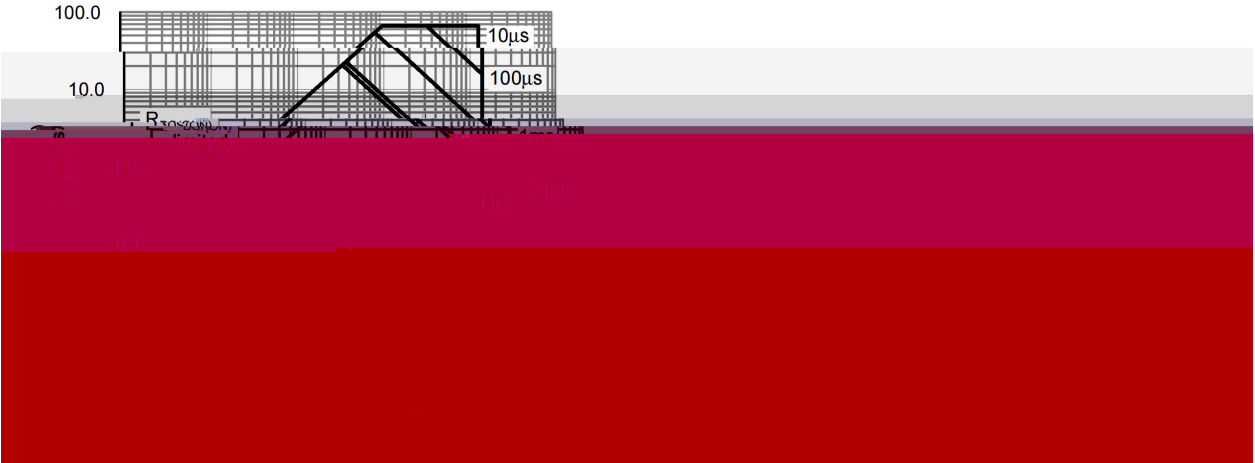
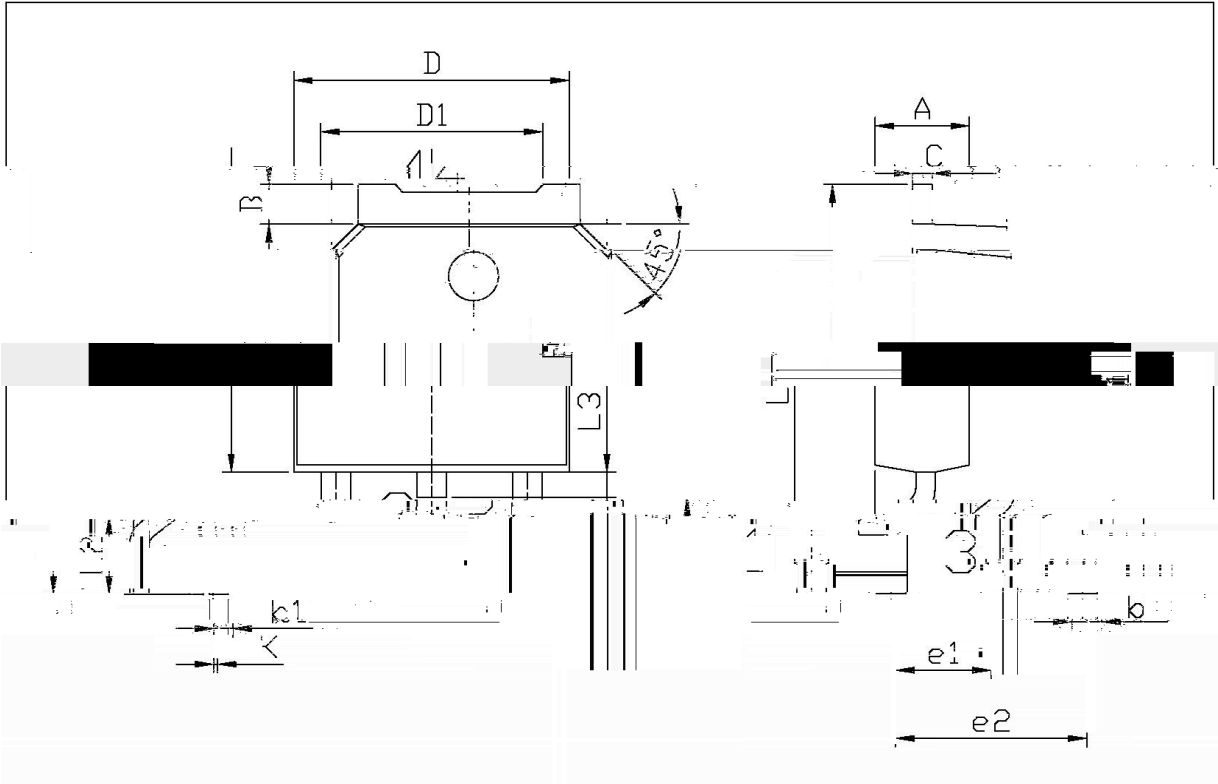


Figure 9: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



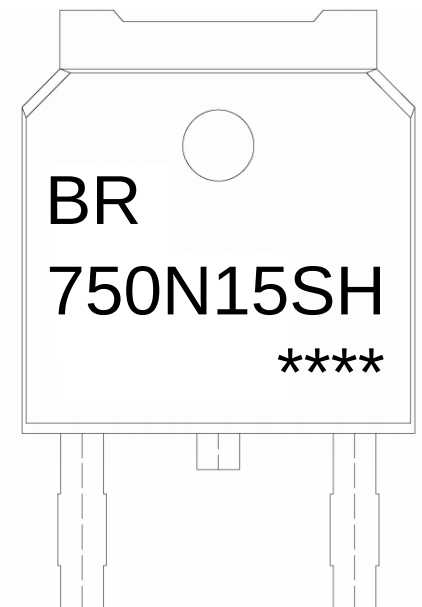
单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	6.25	2.70	A	1.25	5.95
B	2.34	0.95	b1	0.55	2.24
C	4.74	0.45	D	1.70	9.8
D	10.35	5.5	D1	2.00	L3
e1	0.60	0.90		6.45	6.75
e2	5.50	0.00		0.10	5.10

T0-252



/ Marking Instructions



BR

:83Q48VK

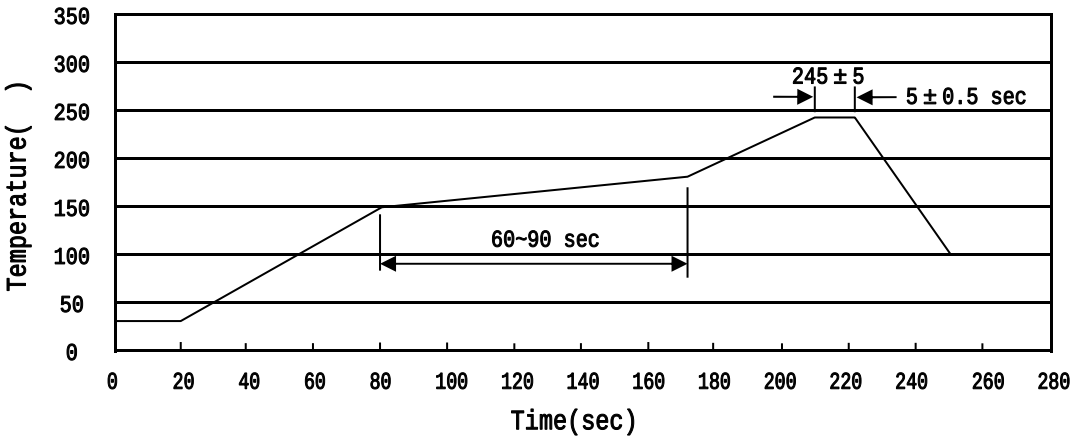
Note:

BR: Company Code

750N15SH: Product Type Code

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

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Note:

- 1

150 180%

60 90sec;

1.Preheating:150~180%, Time:60~90sec.
- 2

245 ± 5%

5 ± 0.5sec;

2.Peak Temp.:245 ± 5%, Duration:5 ± 0.5sec.
- 3

2 10%/sec.

3. Cooling Speed: 2~10%/sec.

/ Resistance to Soldering Heat Test Conditions

260 ± 5°C 10 ± 1 sec. Temp.:260±5°C Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices