

/ Descriptions

N TO-252 M M J Q Z 1
N-CHANNEL MOSFET in a TO-252 Plastic Package.

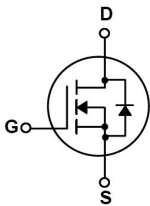
/ Features

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

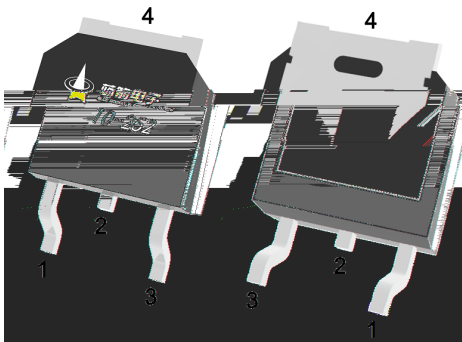
/ Applications

OHG Ũ x i W T Ä H U = a l Q L
LED backlighting, Ideal for high-frequency switching and synchronous rectification.

/ Equivalent Circuit



/ Pinning



PIN1 X G PIN 2 X D PIN 3 X S PIN 4 X D

/ Marking

M 1 "
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	

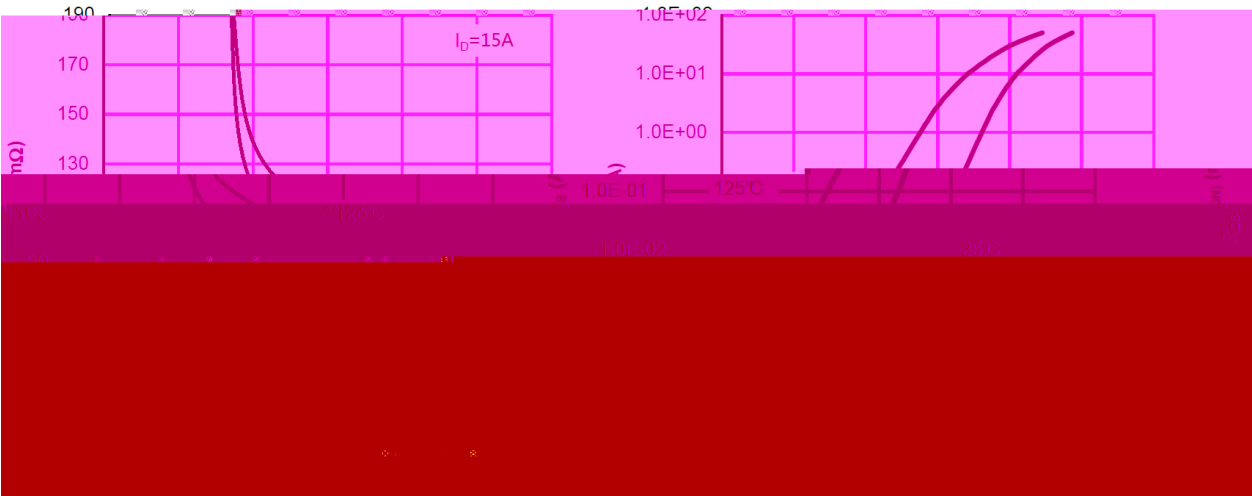
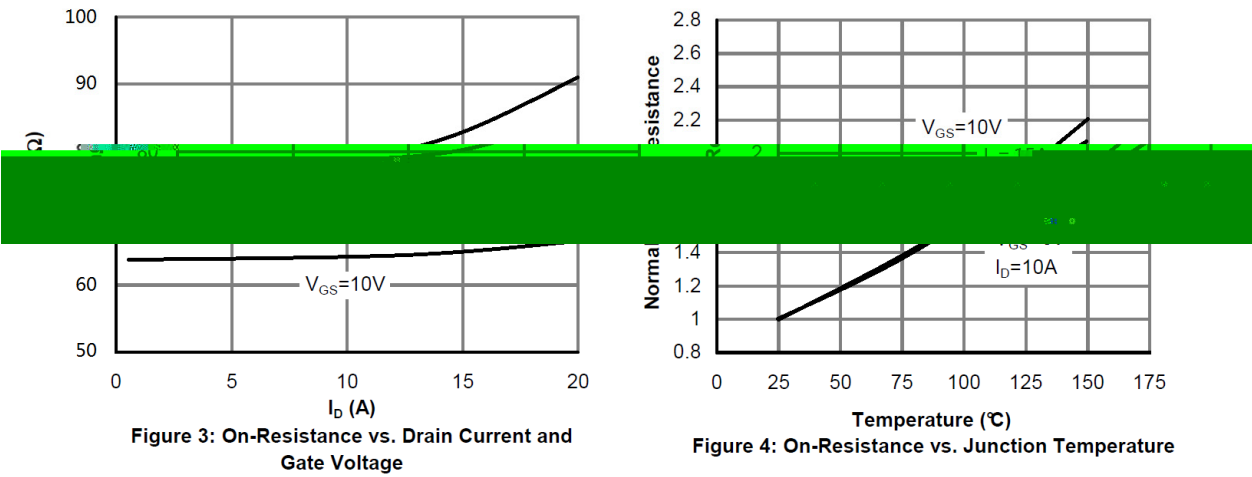
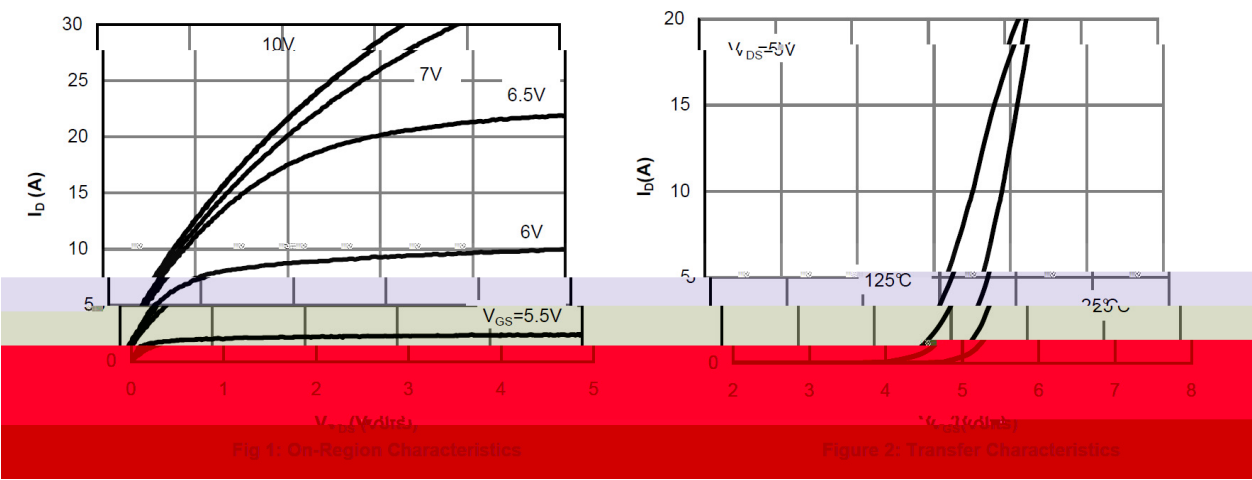
/ Electrical Characteristics(Ta=25)

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 =3Ω		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

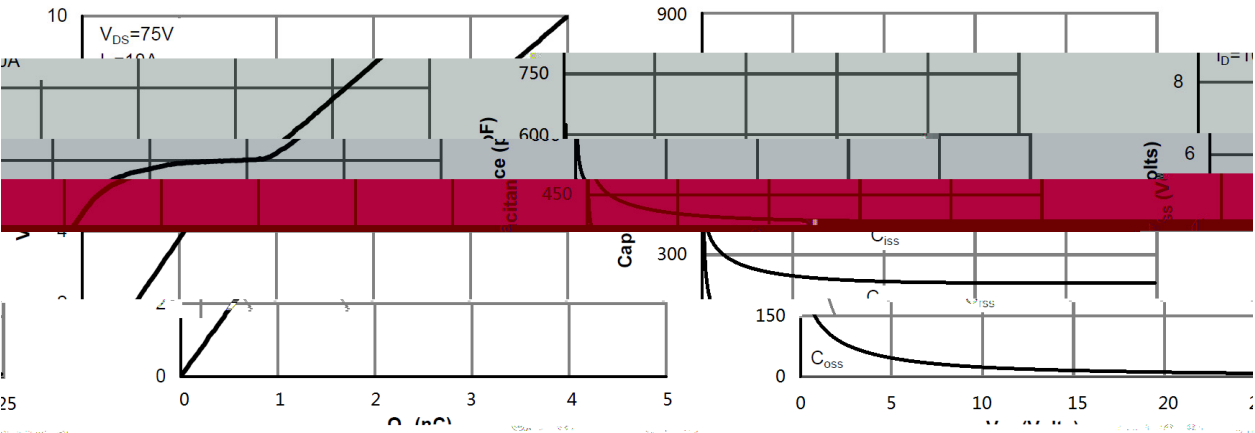


Figure 7: Gate-Charge Characteristics

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

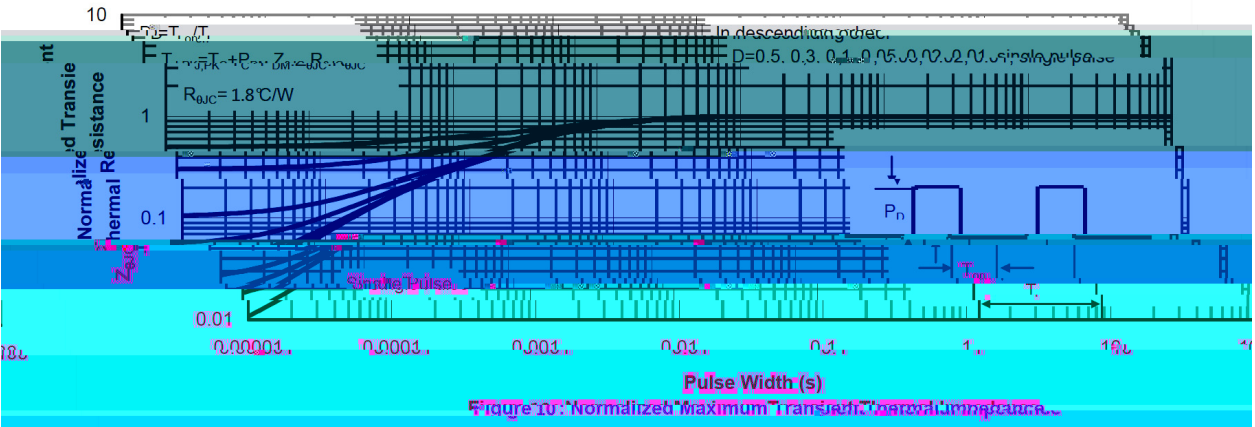
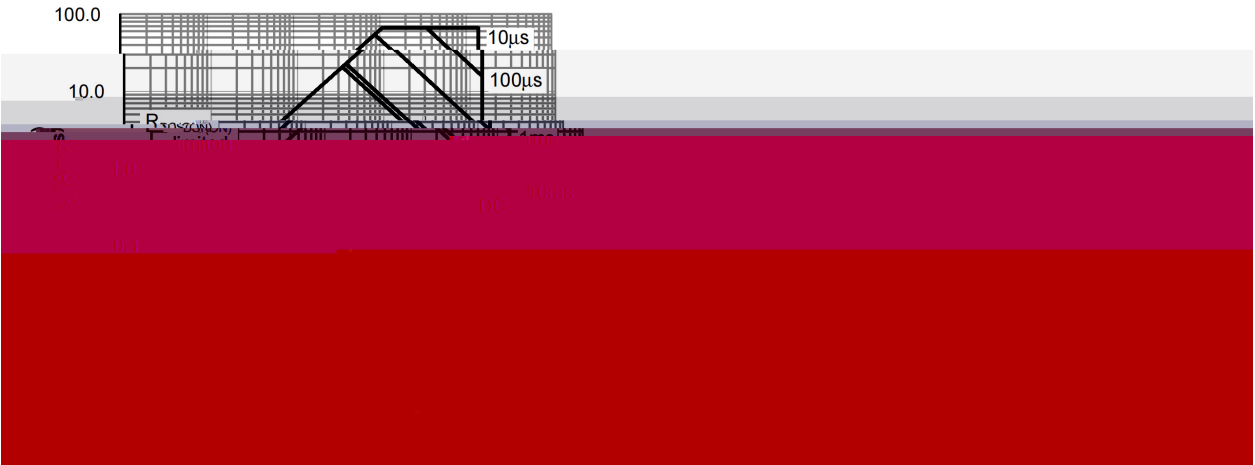
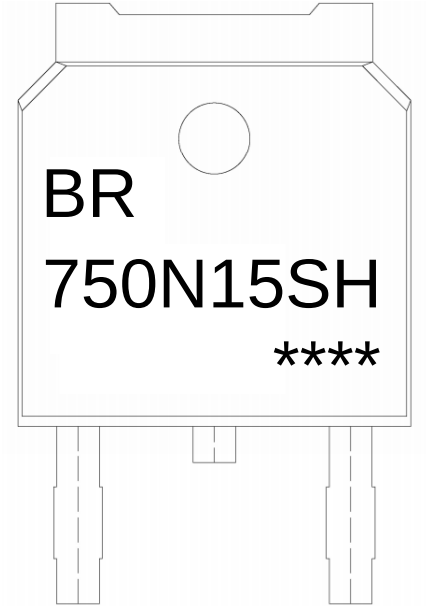


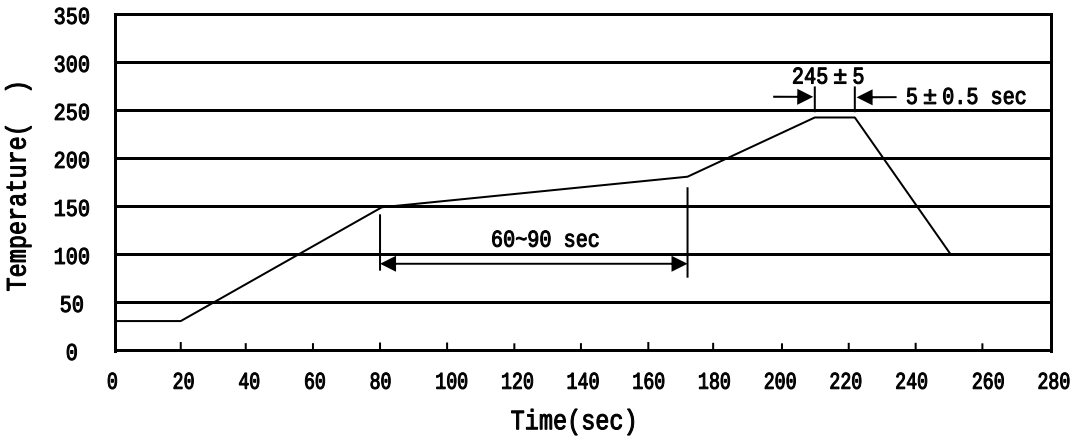
Figure 9: Normalized Maximum Transient Thermal Impedance

/ Marking Instructions



” X
BR X 公司代码
:83Q48VK X 产品代码
---- X 批次代码
Note:
BR: Company Code
750N15SH: Product Type Code
****: Lot No. Code, code change with Lot No.

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- Note:
1.Preheating:150~180 , Time:60~90sec.
2.Peak Temp.:245 ° 5 , Duration:5 ° 0.5sec.
3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Table with 9 columns: Package Type, Units (2, 5,000, 6, 30,000), Dimension (unit mm³) (13 x16, 360x360x50, 380x335x366)

/ TUBE

Table with 9 columns: Package Type, Units (75, 48, 3,600, 5, 18,000), Dimension (unit mm³) (526x20.5x5.25, 555x164x50, 575x290x180)

/ Notices