

Rev.A Jun.-2025

N TO-252

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

$V_{DS}(V) = 150V$   $I_D=20.5A$

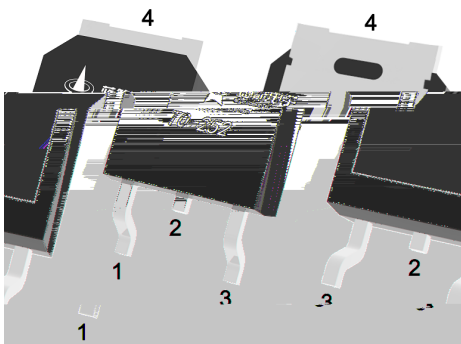
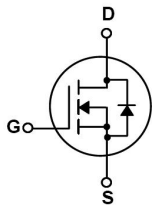
$R_{DS(ON)}@10V$  75m (Typ. 65m )

$R_{DS(ON)}@6V$  120m (Typ. 79m )

HF Product.

$C_{<$

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



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

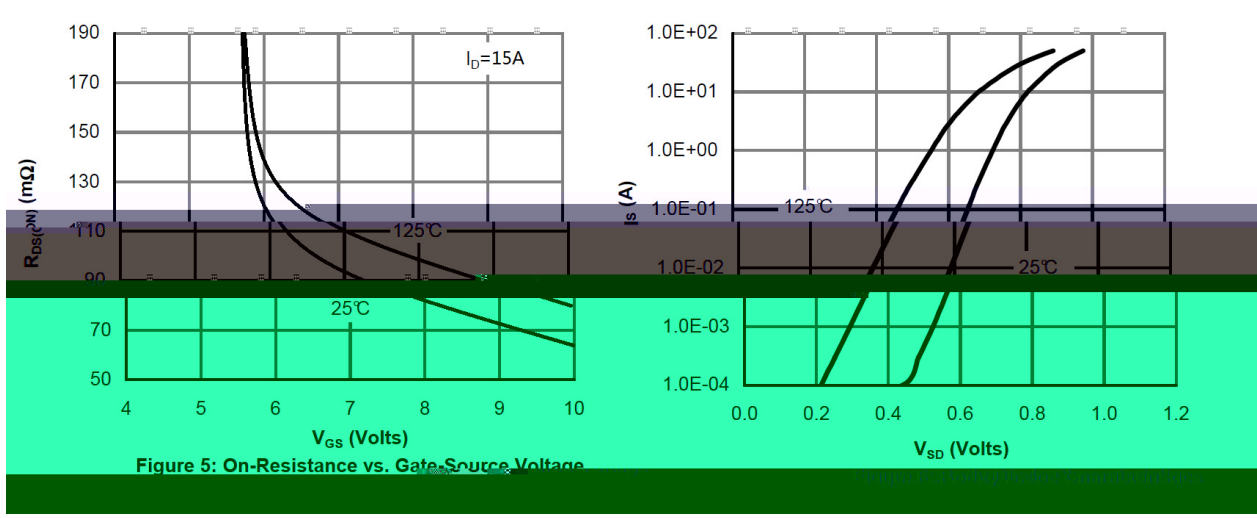
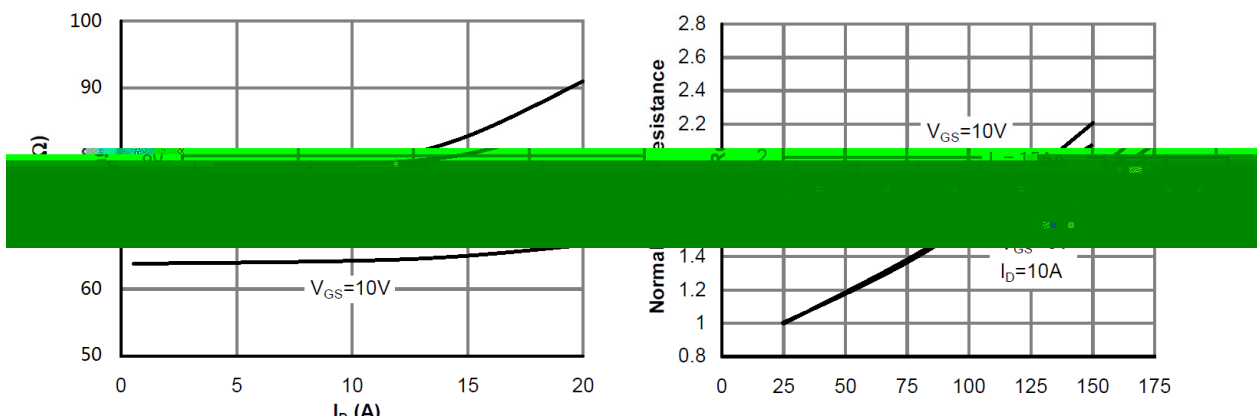
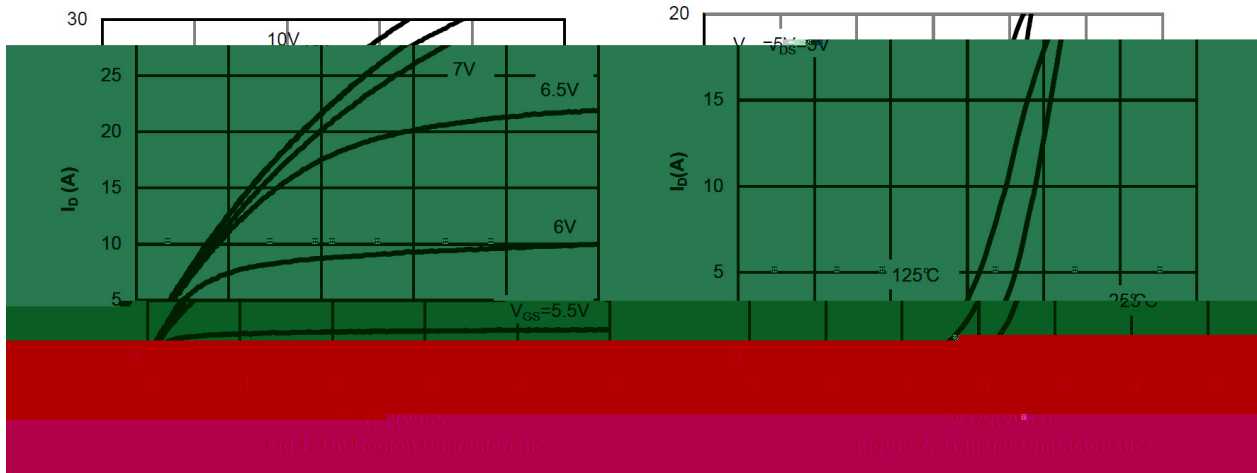
See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	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	$V_{GSS}$	$\pm 20$	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	$R_{JA}$	75	/W
Thermal Resistance-Junction to Case	$R_{JC}$	1.8	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	150	167		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=150V$ $V_{GS}=0V$			1	$\mu A$
Gate-Body leakage current	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 100$	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
		$V_{GS}=6V$ $I_D=10A$		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	$R_g$	$V_{GS}=0V$ $f=1MHz$ $V_{DS}=0V,$		1.9		$\Omega$
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		



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		



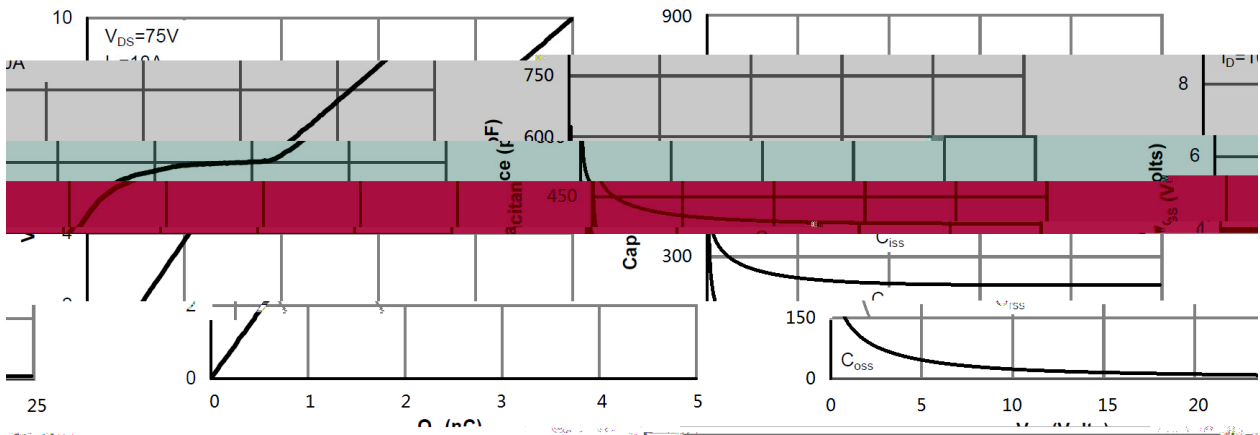
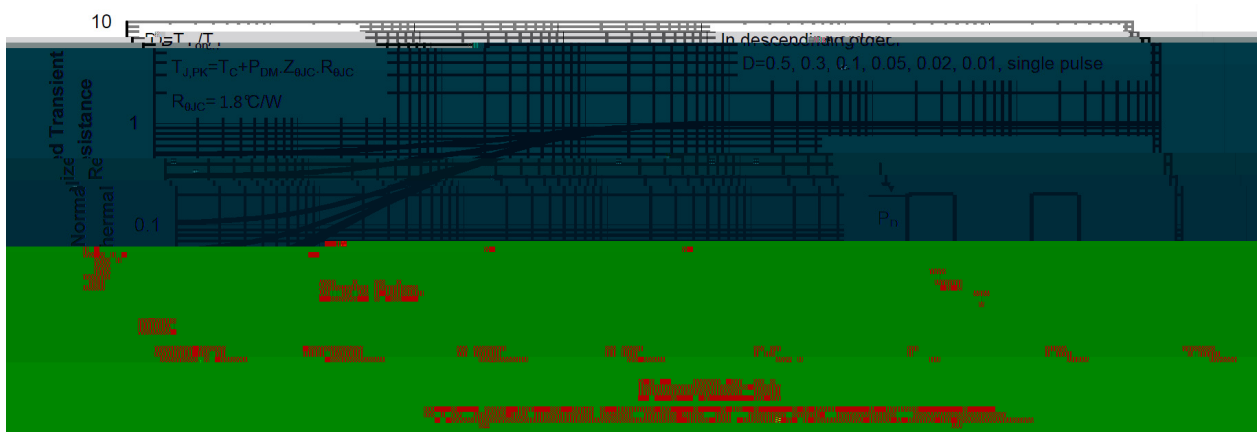
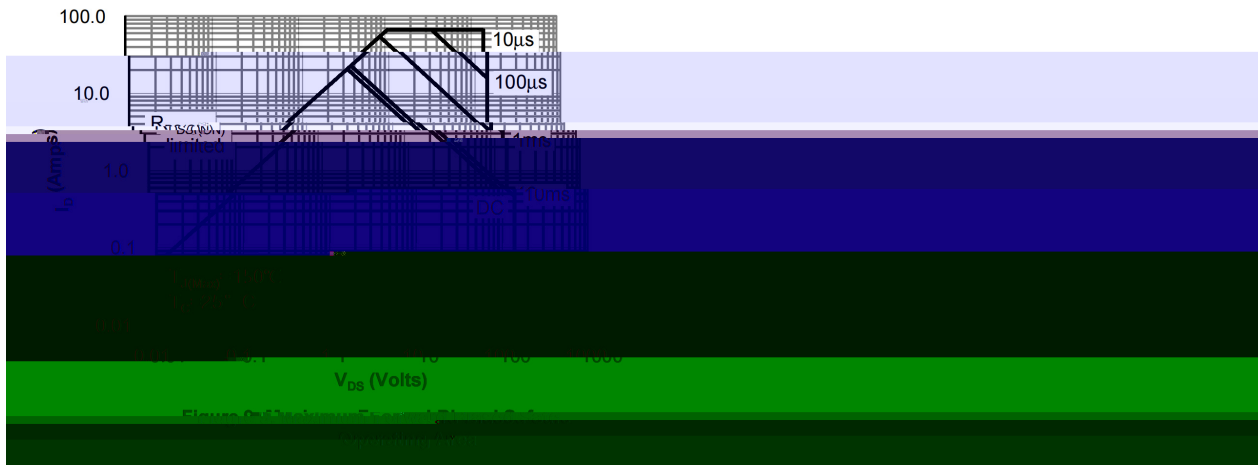
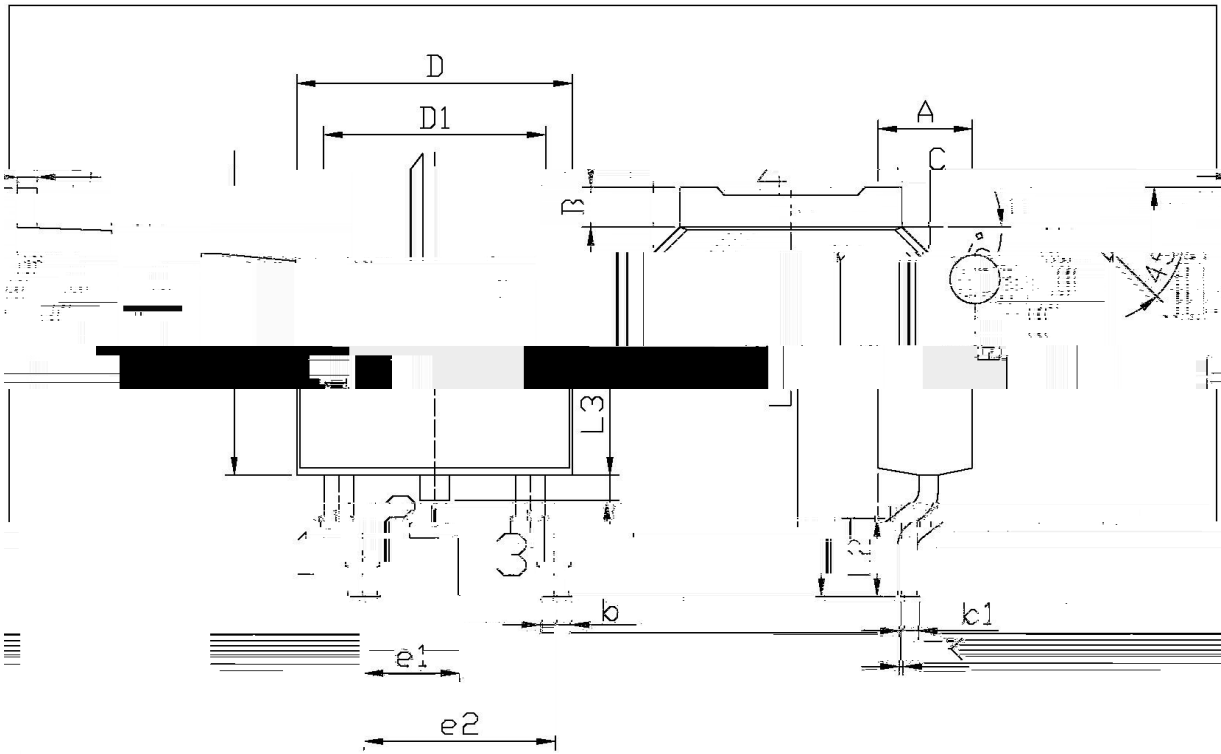


Figure 7: Gate-Charge Characteristics

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics



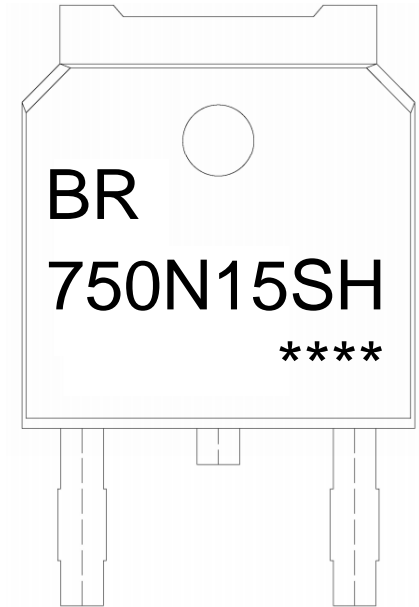


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
E1	5.95	6.25	A	2.20	2.40
E2	2.24	2.34	B	0.95	1.25
E3	1.42	1.72	E4	0.39	0.69
L1	9.85	10.35	E5	0.45	0.55
E6	20.45	21.55	E7	1.70	2.00
E8	0.60	0.90	D	6.45	6.75
E9	0.60	0.90	L3	5.10	5.50

52

T0-25



BR

., ' E (, J?

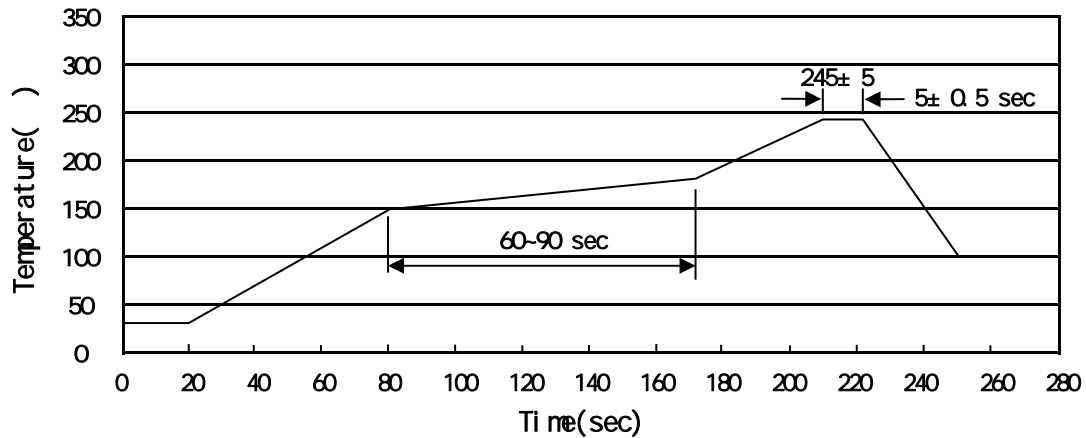
!!!!

Note:

BR:            Company Code

750N15SH:    Product Type Code

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

**Temperature Profile for IR Reflow Soldering(Pb-Free)**


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.              |

260..5

10..1 sec.

Temp.:260±5°C

Time:10±1 sec

/ REEL

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13 x16	360x360x50	380x335x366

/ TUBE

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526x20.5x5.25	555x164x50	575x290x180