

/ Descriptions

N TO-252

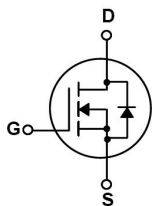
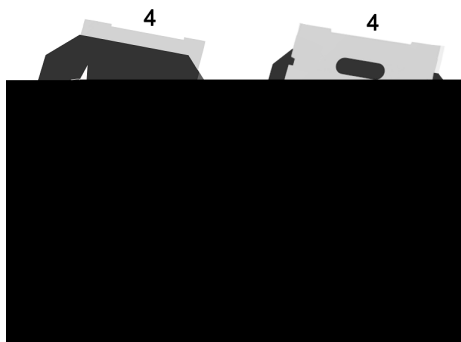
N-CHANNEL MOSFET in a TO-252 Plastic Package.

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

HF Product.

/ Applications

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	$I_D(T_c=25)$	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	$P_D(T_c=25)$	70	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	R_{JA}	75	/W
Thermal Resistance-Junction to Case	R_{JC}	1.8	

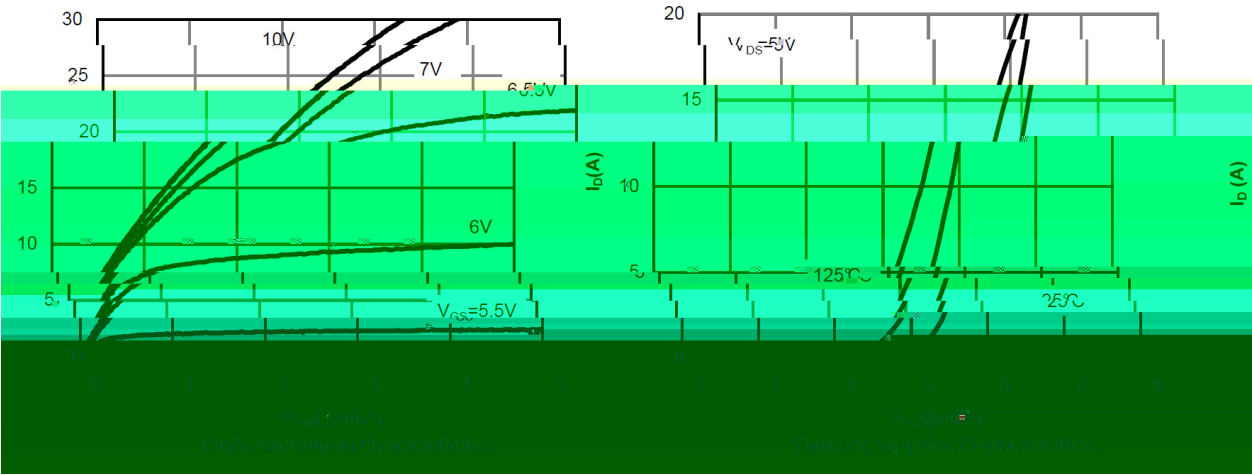
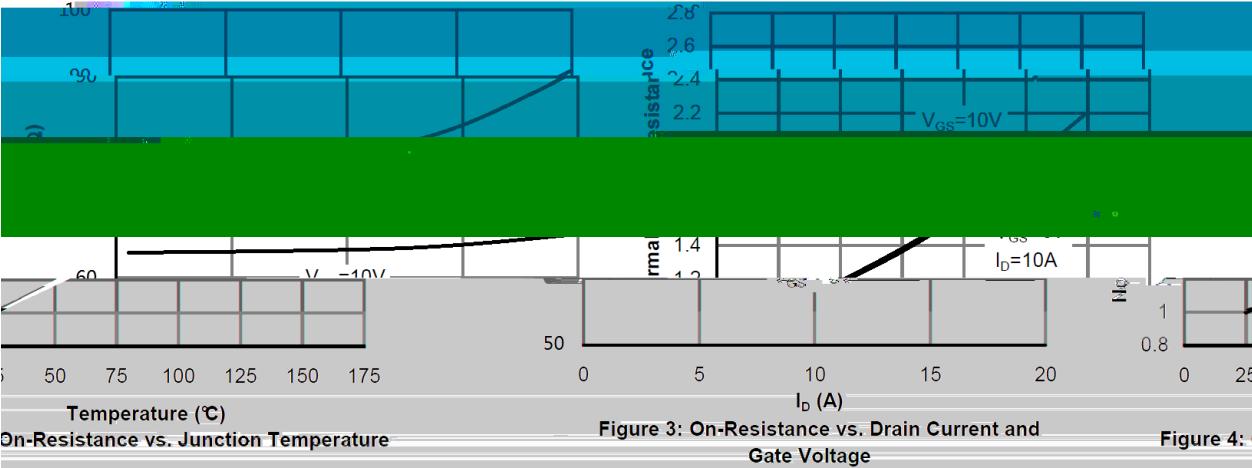
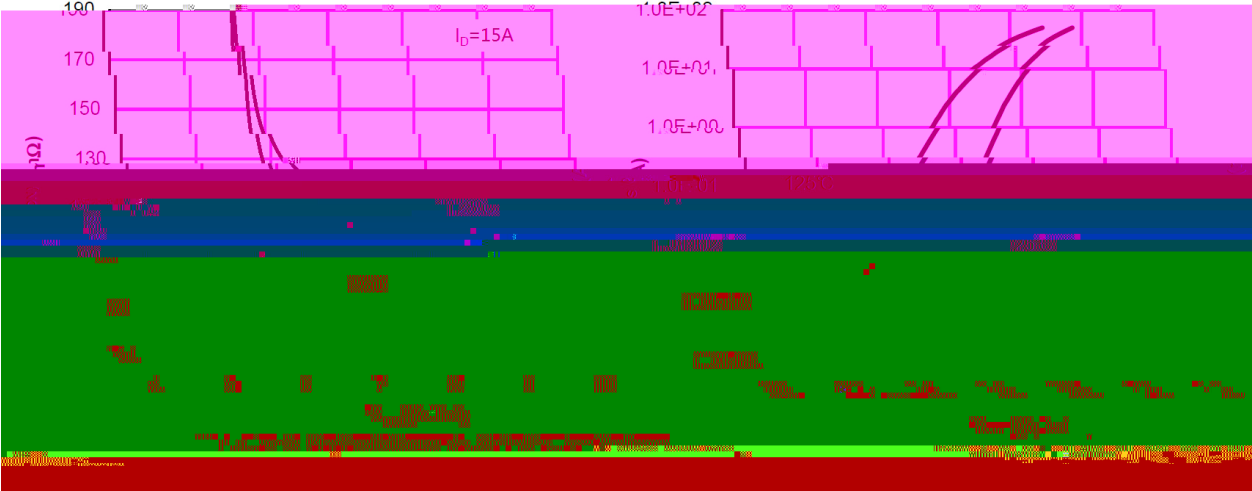
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250$ A	150	167		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=150V$ $V_{GS}=0V$			1	A
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250$ 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	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.9		
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	$t_{D(on)}$	$V_{DS}=75V$ $I_D=10A$ $V_{GS}=10V$ $R_G=3$		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

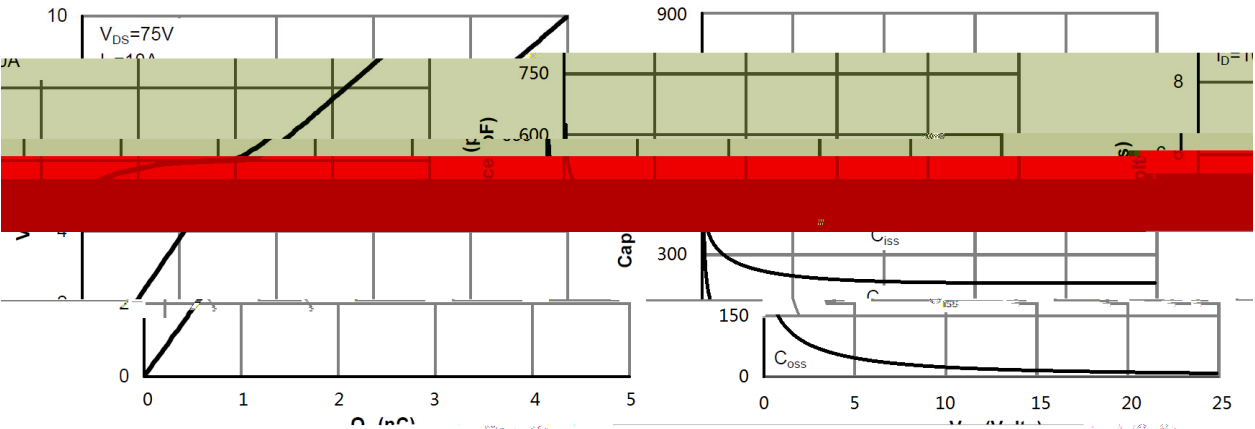


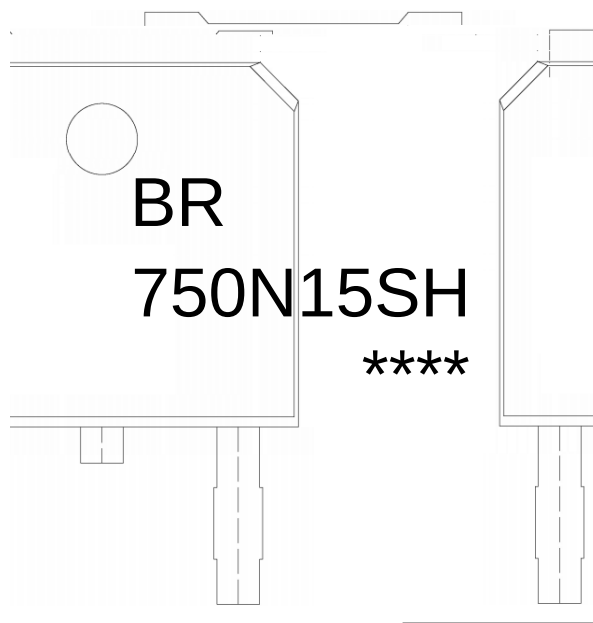
Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics



BRCS750N15SHDP
Rev.A Jun.-2025

/ Marking Instructions



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Note:

BR: Company Code

750N15SH: Product Type Code

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

