

BRD15N10

Rev. J Jul.-2019

TO-252 N

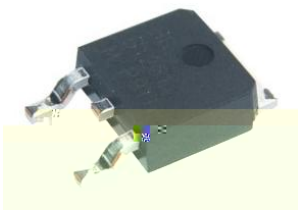
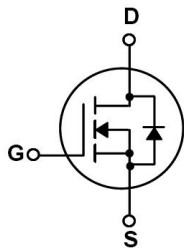
N-CHANNEL MOSFET in a TO-252 Plastic Package.

$R_{DS(on)}$ C_{iss}

Low $R_{DS(on)}$, low gate charge, low C_{iss} , fast switching. Halogen-free Product.

DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.



PIN1 G

PIN 2 D

PIN 3 Halog TD6G

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Drain Current		$I_D(T_c=25)$	15	A
Drain Current		$I_D(T_c=100)$	10	A
Drain Current - Pulsed*		I_{DM}	45	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	90	mJ
Avalanche Current		I_{AS}	9.1	A
Power Dissipation		$P_D(T_c=25)$	39	W
Operating and Storage Temperature Range		T_j T_{stg}	-55 150	
Junction-to-Ambient	$t \leq 10s$	R_{JA}	20	/W
Junction-to-Ambient	Steady-State		50	
Junction-to-Case	Steady-State	R_{JC}	3.2	

*Repetitive rating; pulse width limited by max. junction temperature.

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250 A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V$ $V_{GS}=0V$			1.0	A
		$T_J=125$			50	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250 A$	1	1.9	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=8.5A$		75	90	m
		$T_J=125$		142		
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=15A$		1.0	1.2	V
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		1.3		
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		250		pF
Output Capacitance	C_{oss}			125		pF
Reverse Transfer Capacitance	C_{rss}			20		pF
Total Gate Charge(10V)	Q_g	$V_{GS}=10V$ $V_{DS}=50V$ $I_D=5A$		5.8		nC
Total Gate Charge(4.5V)	Q_g			2.8		nC
Gate Source Charge	Q_{gs}			1.1		nC
Gate Drain Charge	Q_{gd}			1.2		nC
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=10$ $R_{GEN}=3$		6		ns
Turn-On Rise Time	t_r			2.5		ns
Turn-Off Delay Time	$t_{d(off)}$			18		ns
Turn-Off Fall Time	t_f			2.5		ns

/ Electrical Characteristic Curve

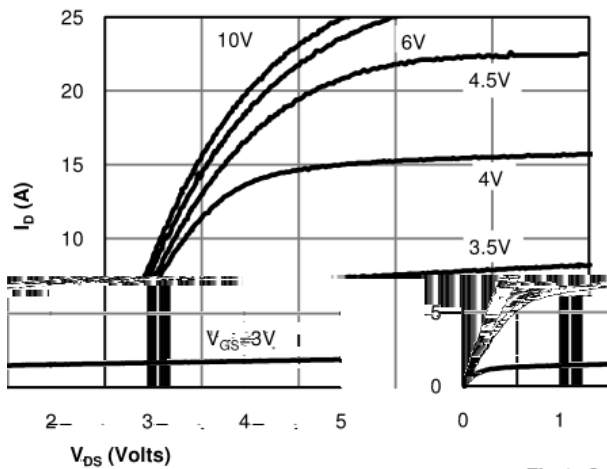


Fig 1: On

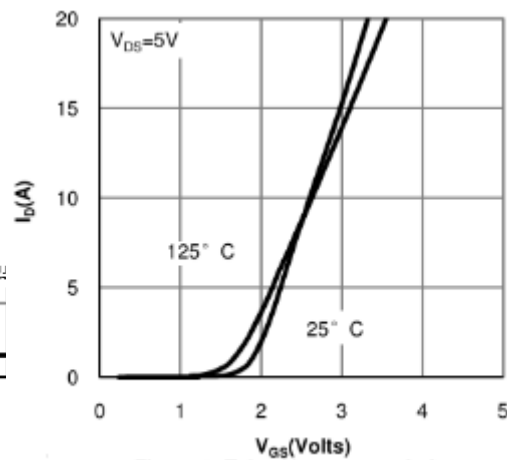


Figure 2: Transfer Characteristics

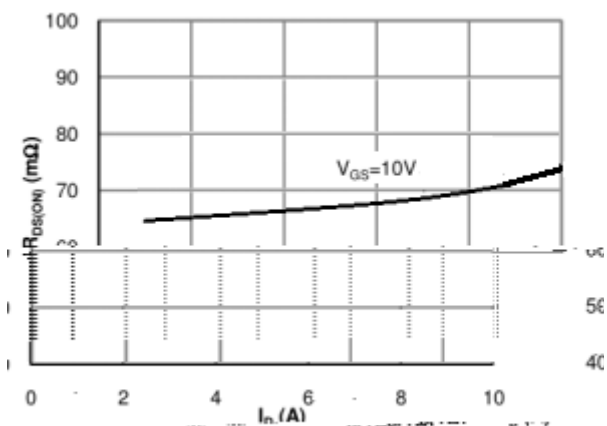


Figure 3: On-Resistance vs. Drain Current

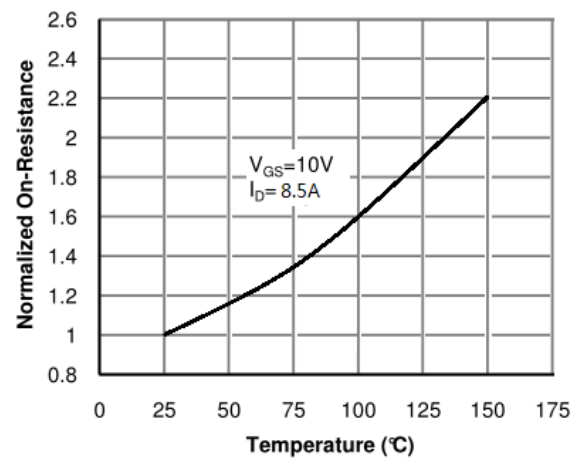


Figure 4: On-Resistance vs. Junction Temperature

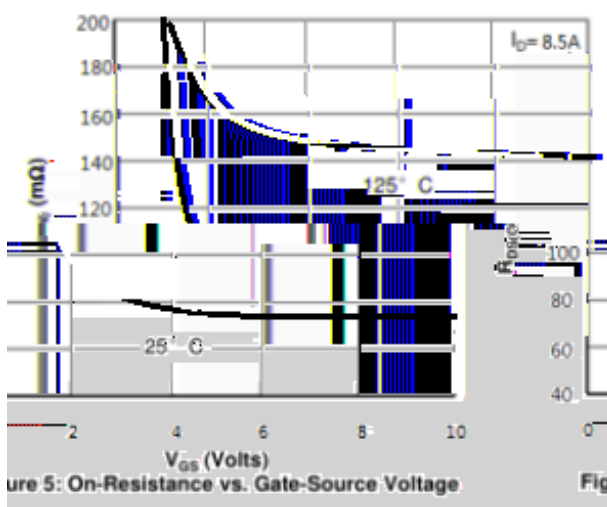


Figure 5: On-Resistance vs. Gate-Source Voltage

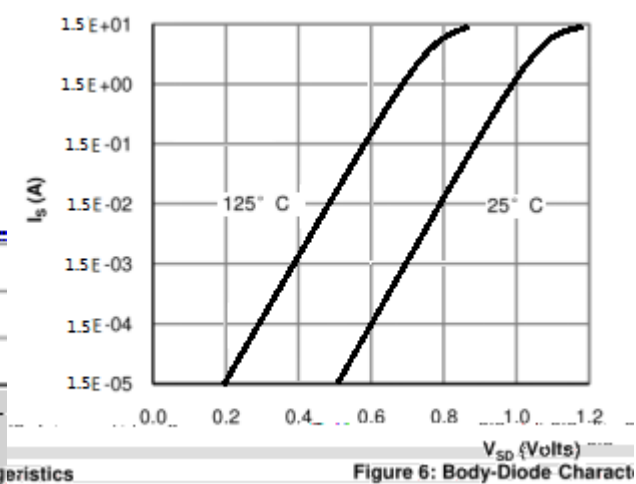


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

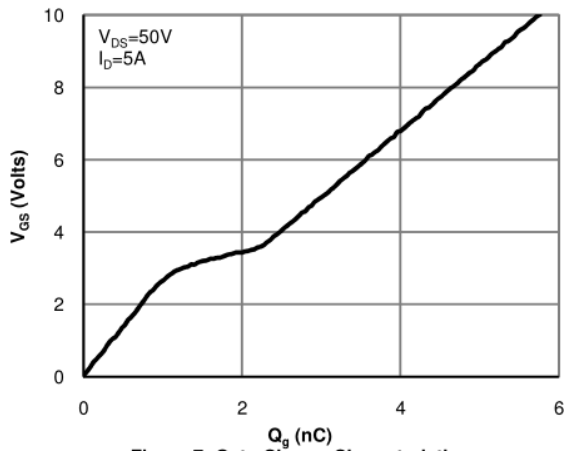


Figure 7: Gate-Charge Characteristics

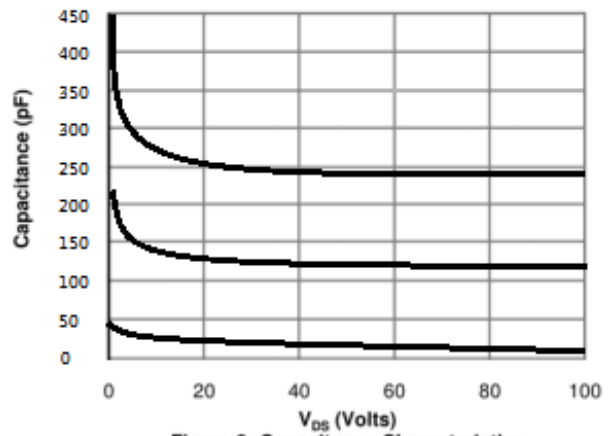


Figure 8: Capacitance Characteristics

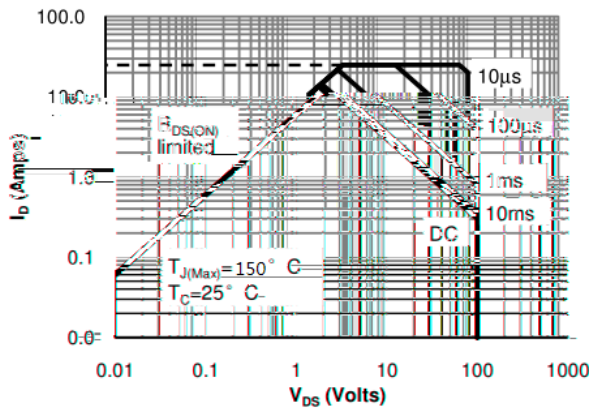


Figure 9: Maximum Forward Biased Safe Operating Area

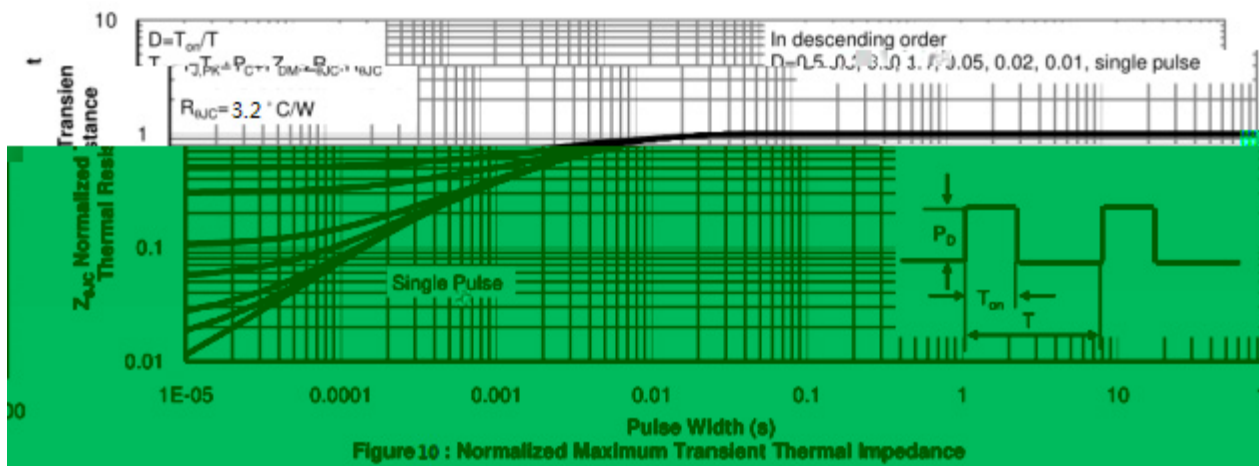
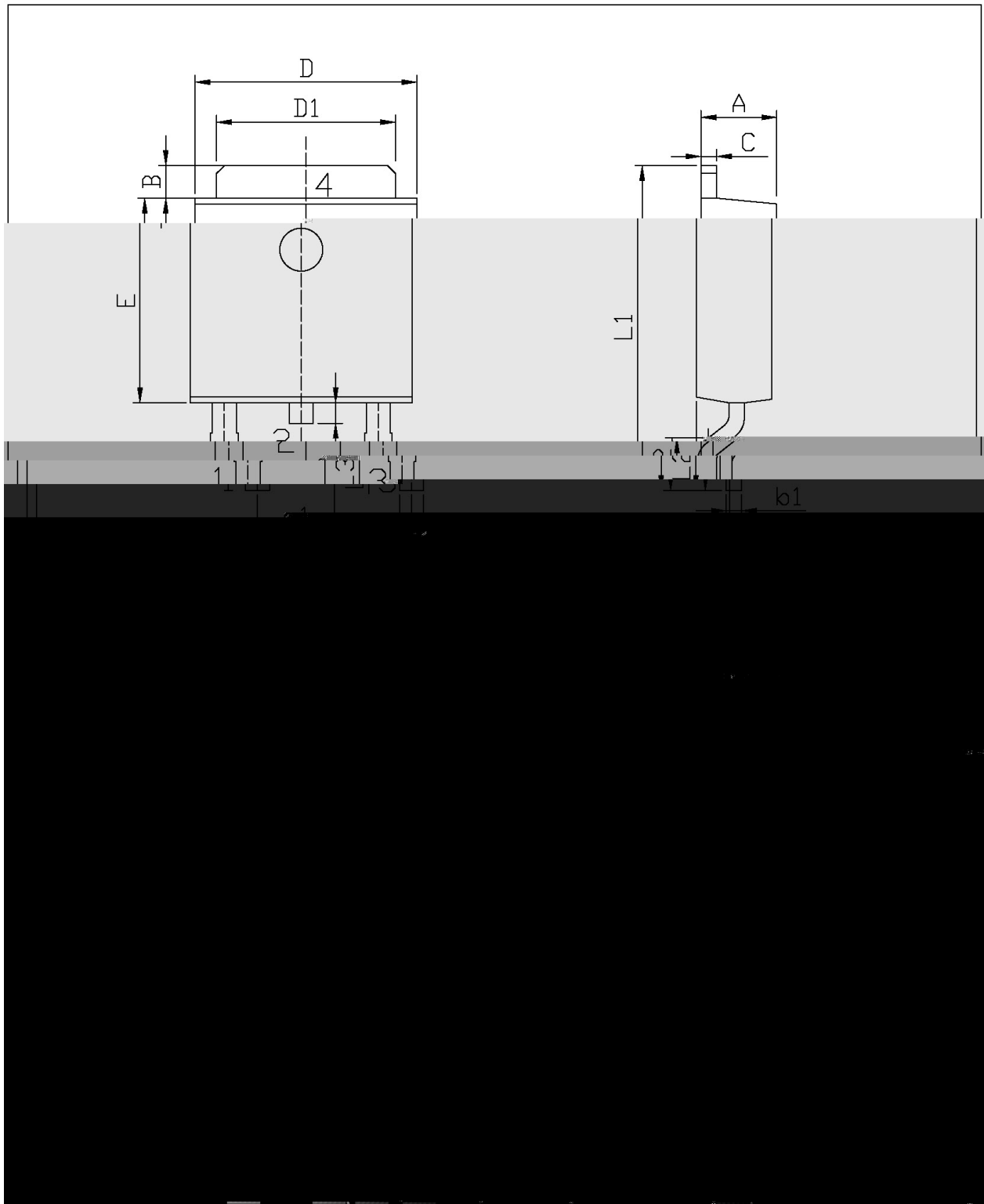
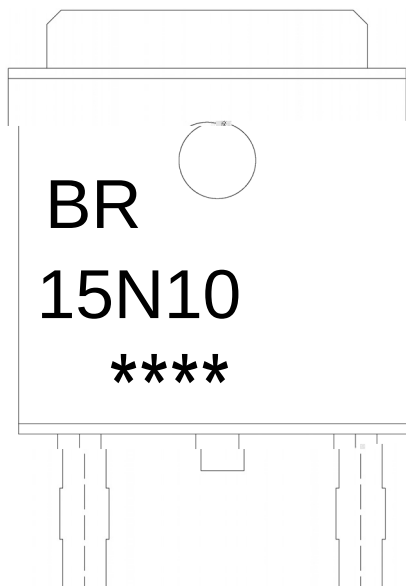


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



/ Marking Instructions



BR

15N10

Note:

BR: Company Code

15N10: Product Type.

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

