

**/ Descriptions**

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

**/ Features**

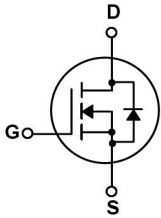
Low gate charge, low crss, fast switching.

**/ Applications**

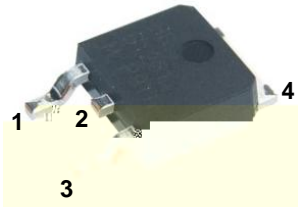
DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 G          PIN 2,4 D          PIN 3 S

**/ h<sub>FE</sub> Classifications & Marking**

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	200	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	18	A
Drain Current	$I_D(T_C=100^\circ\text{C})$	11.2	A
Pulsed Drain Current <sup>Note1</sup>	$I_{DM}$	72	A
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Single Pulsed Avalanche Energy <sup>Note2</sup>	$E_{AS}$	500	mJ
Repetitive Avalanche Energy	$E_{AR}$	13.9	mJ
Avalanche Current <sup>Note1</sup>	$I_{AR}$	10	A
Total Power Dissipation	$P_D$	186	W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	
Junction-to-Case	$R_{JC}$	0.74	/W
Junction-to-Ambient	$R_{JA}$	48.19	/W

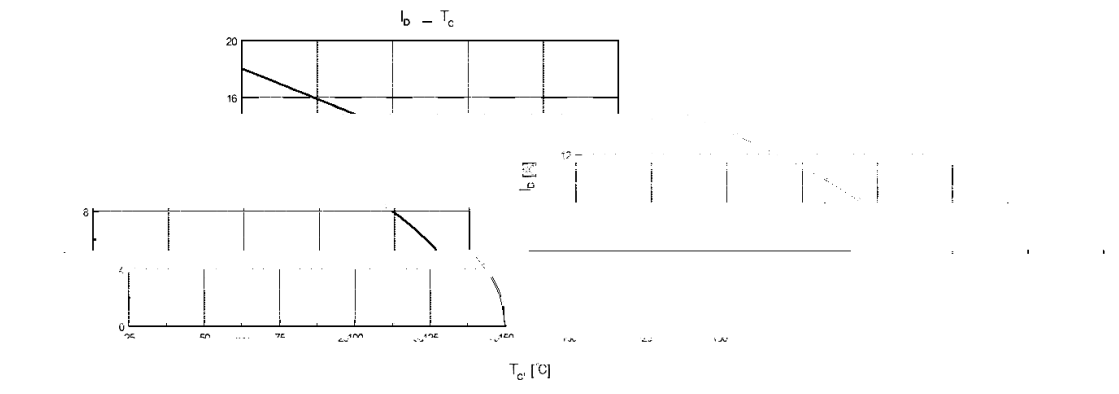
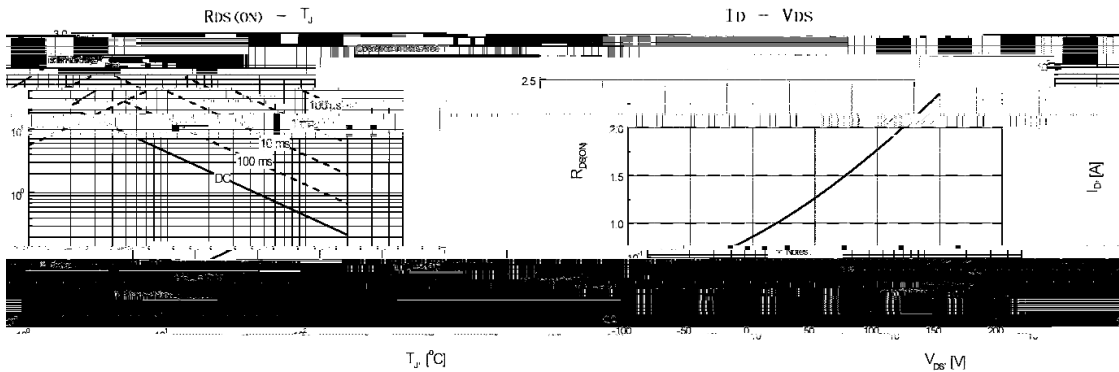
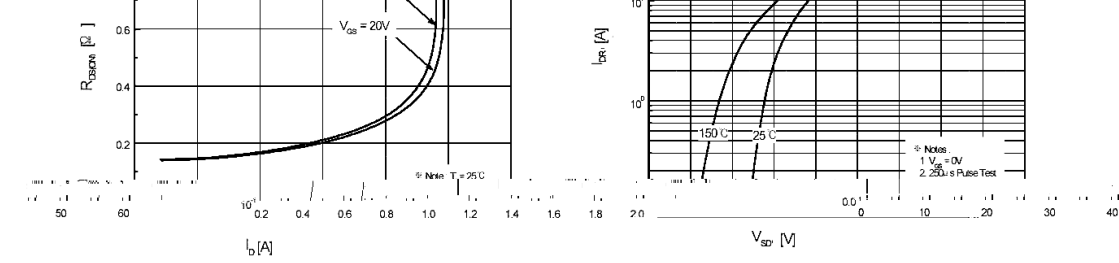
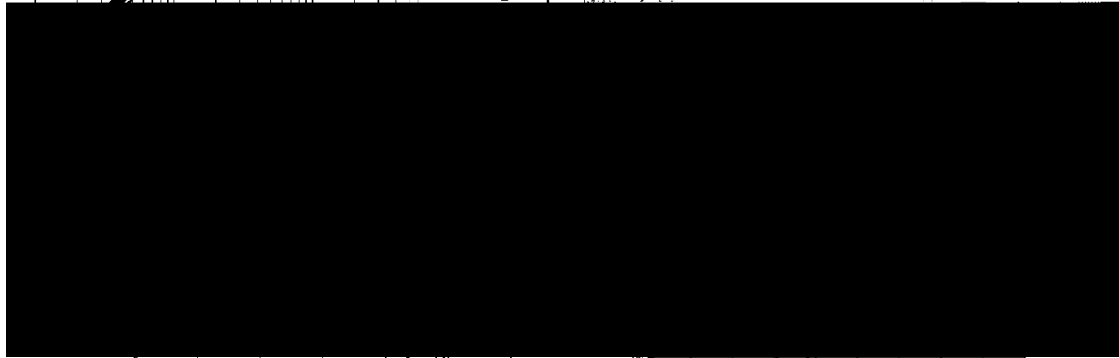
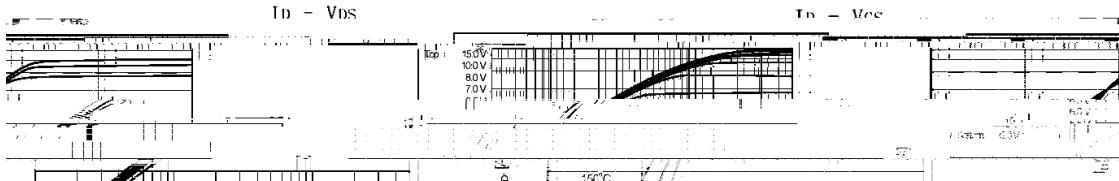
Notes:

- 1 Repetitive rating; pulse width limited by maximum junction temperature
- 2  $L=10.0\text{mH}$ ,  $I_D=10\text{A}$ , Start  $T_J=25^\circ\text{C}$

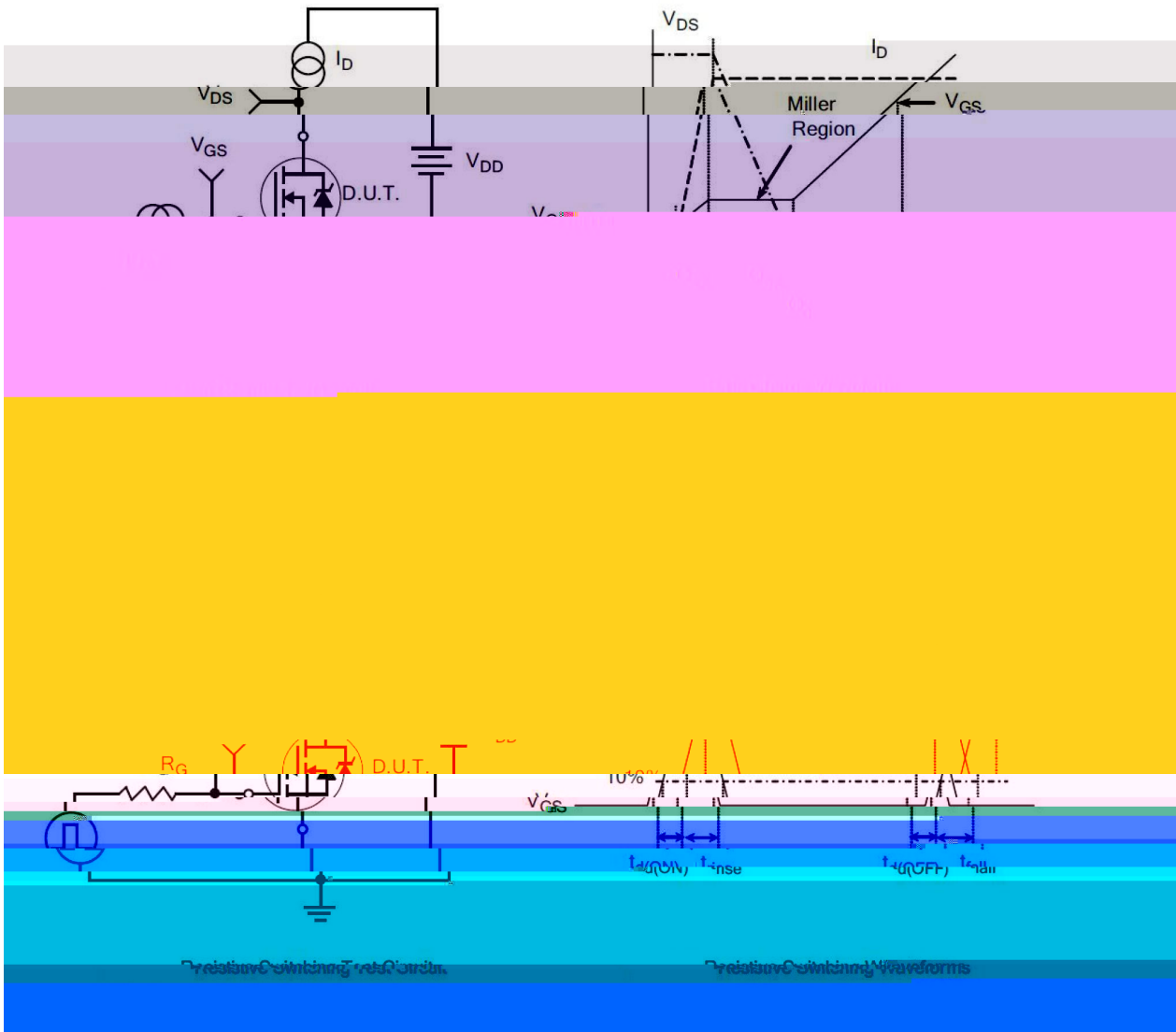
Parameter                      Symbol

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_g$	$I_D=18A$ $V_{DD}=160V$ $V_G=10V$		31		nC
Gate to Source Charge	$Q_{gs}$			8.69		nC
Gate to Drain ("Miller") Charge	$Q_{gd}$			8.59		nC
Continuous Source Current (Body Diode)	$I_S$				18	A
Maximum Pulsed Current (Body Diode)	$I_{SM}$				72	A
Reverse Recovery Time	$t_{rr}$	$I_S=18A$ $T_j = 25^\circ C$ $di_F/dt=100A/us$ $V_{GS}=0V$		208		ns
Reverse Recovery Charge	$Q_{rr}$			0.79		nC

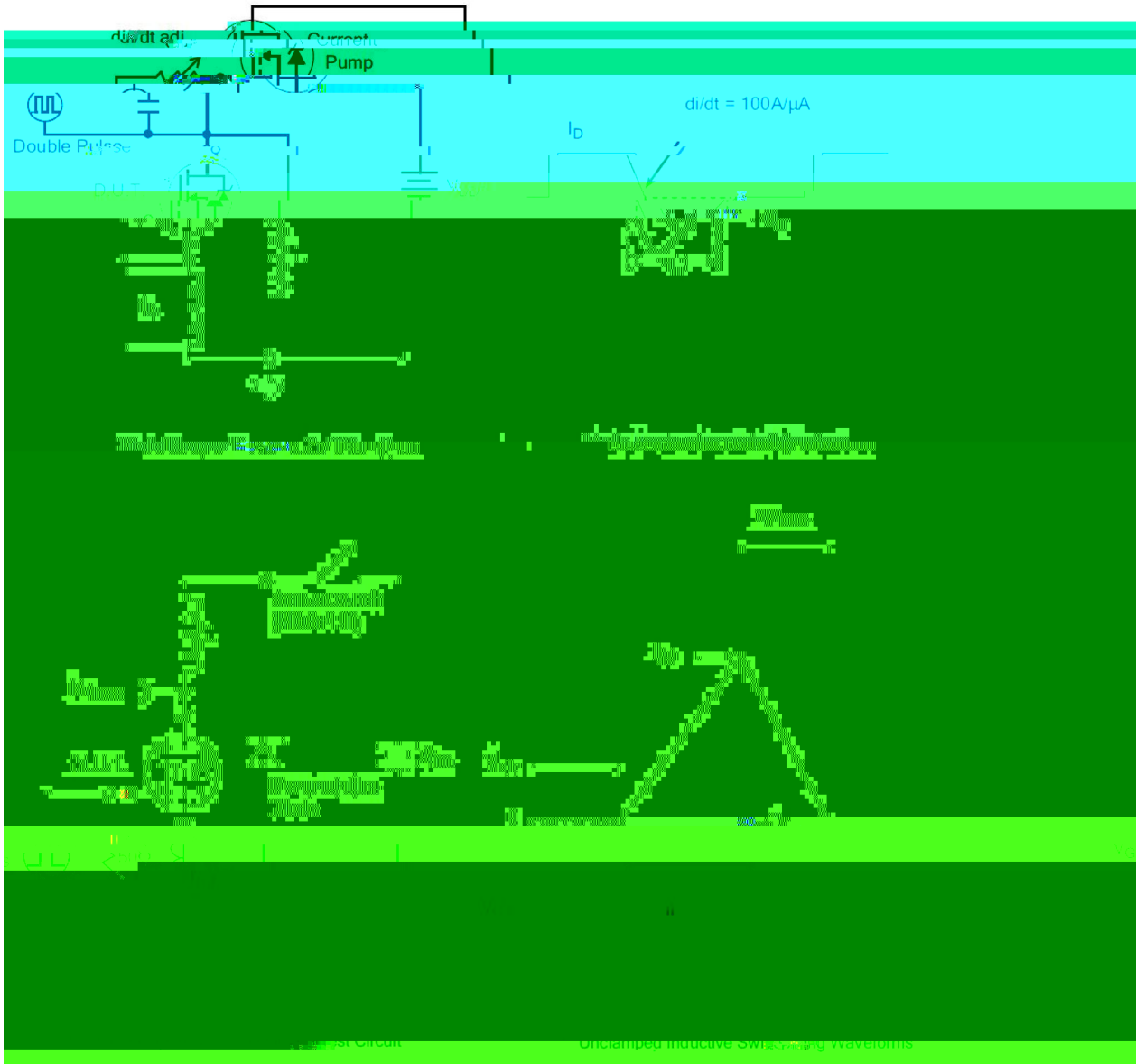
**/ Electrical Characteristic Curve**



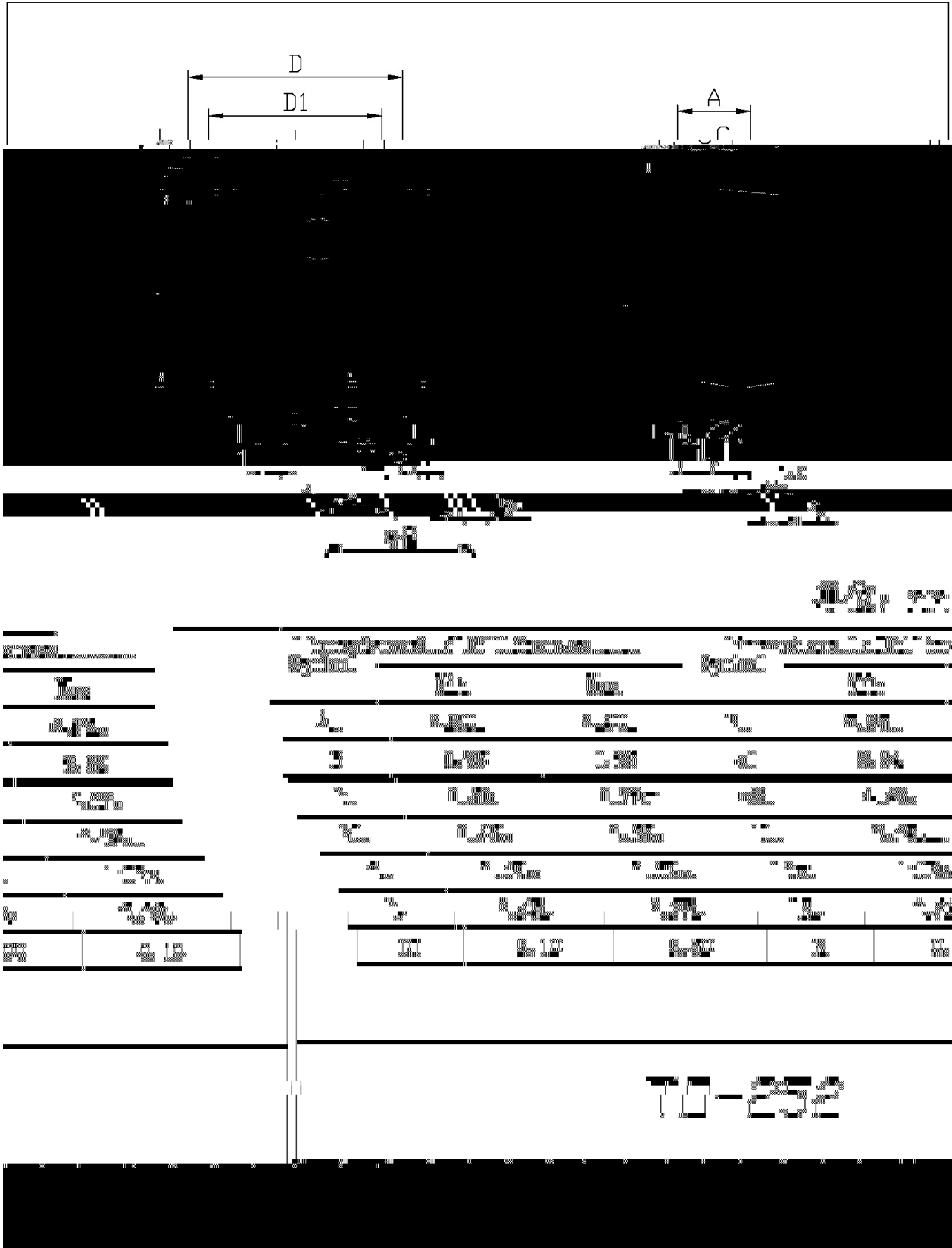
/ Test Circuit and Waveform Curve



/ Test Circuit and Waveform Curve



**/ Package Dimensions**



**BRD640**  
Rev.D May.-2016

