

BRD640

Rev.D May.-2016

/ Descriptions

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

/ Features

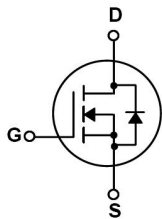
Low gate charge, low crss, fast switching.

/ Applications

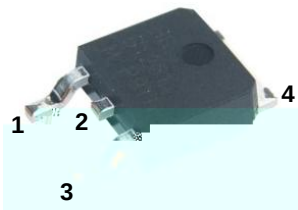
DC/DC

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_{FE} 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 ^{Note1}	I_{DM}	72	A
Gate-Source Voltage	V_{GSS}	± 20	V
Single Pulsed Avalanche Energy ^{Note2}	E_{AS}	500	mJ
Repetitive Avalanche Energy	E_{AR}	13.9	mJ
Avalanche Current ^{Note1}	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

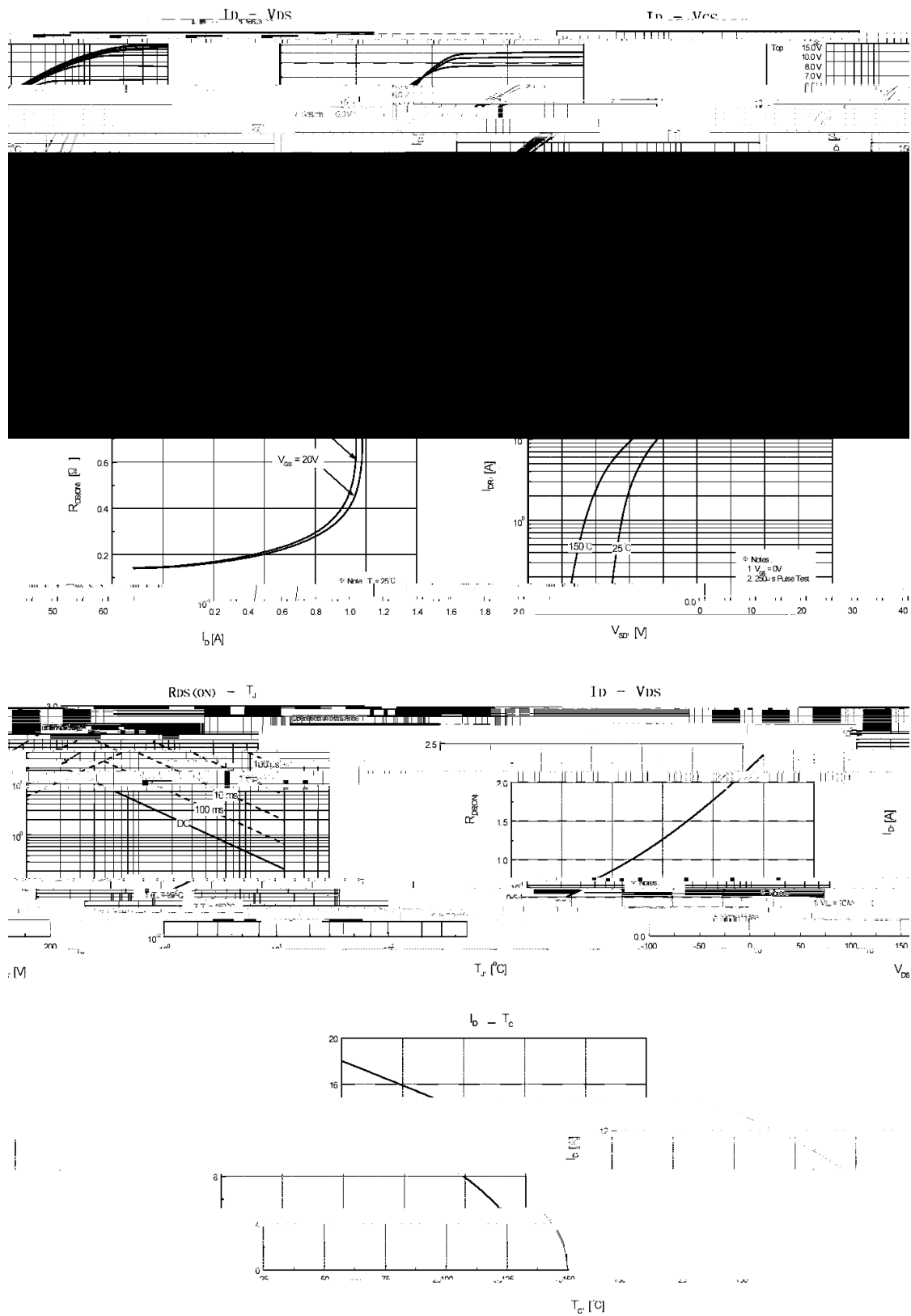
Notes:

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

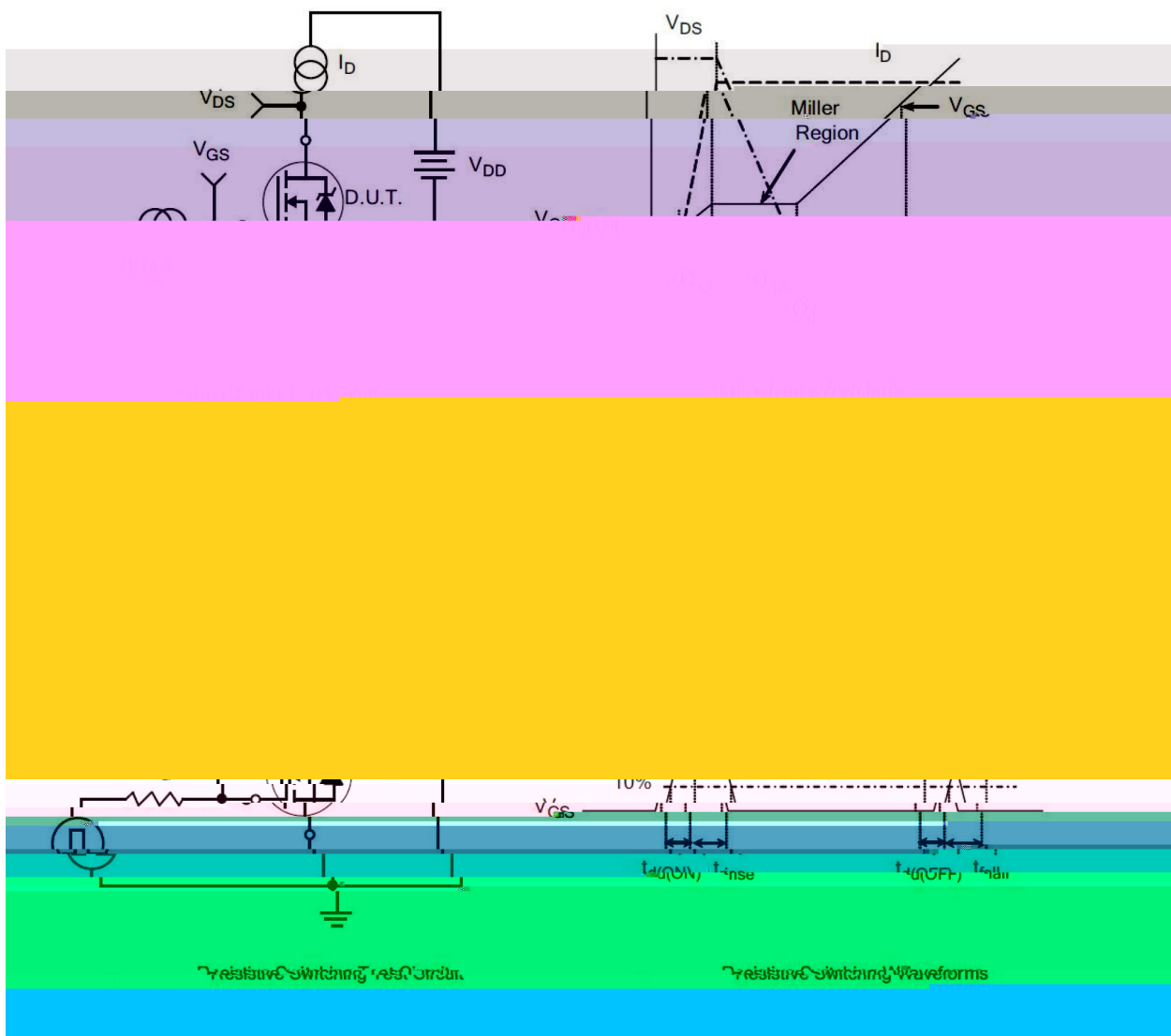
Parameter Symbol

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

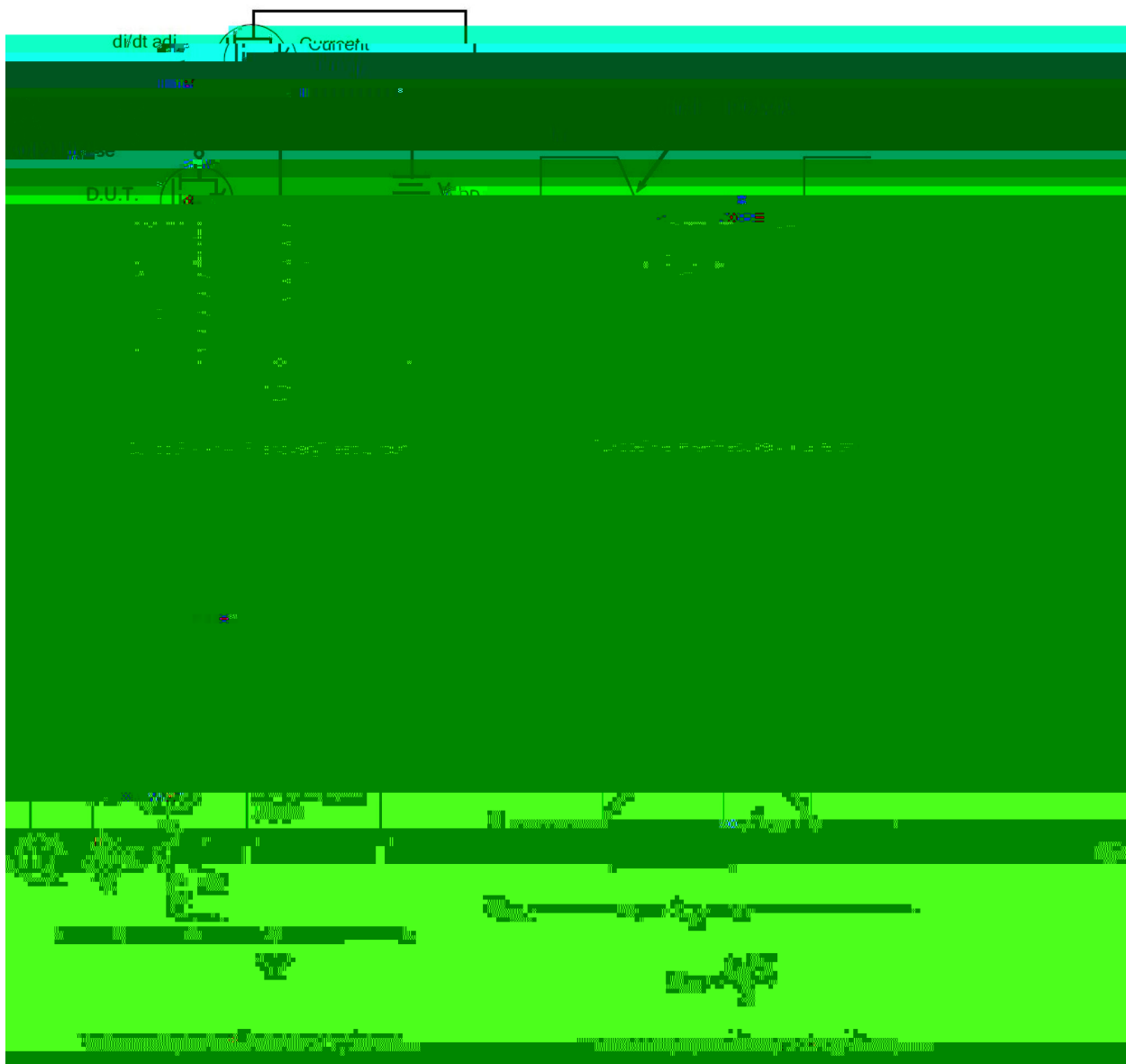
/ Electrical Characteristic Curve



/ Test Circuit and Waveform Curve



/ Test Circuit and Waveform Curve



/ Package Dimensions

