/ Descriptions

SOP-8 N MOS

N-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

/ Features

V_{DS}=30V

I_D=13A (V_{GS} = 10V)

$R_{DS(ON)}$<11.5mΩ (V_{GS}=10V)

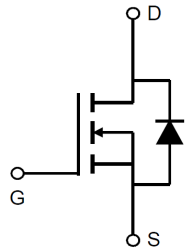
$R_{DS(ON)}$<15.5mΩ (V_{GS}=4.5V)

Halogen-free Product.

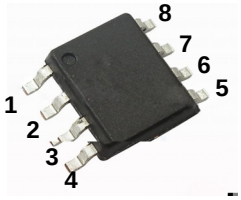
/ Applications

This device is suitable for high side switch in SMPS and general purpose applications.

/ Equivalent Circuit



/ Pinning



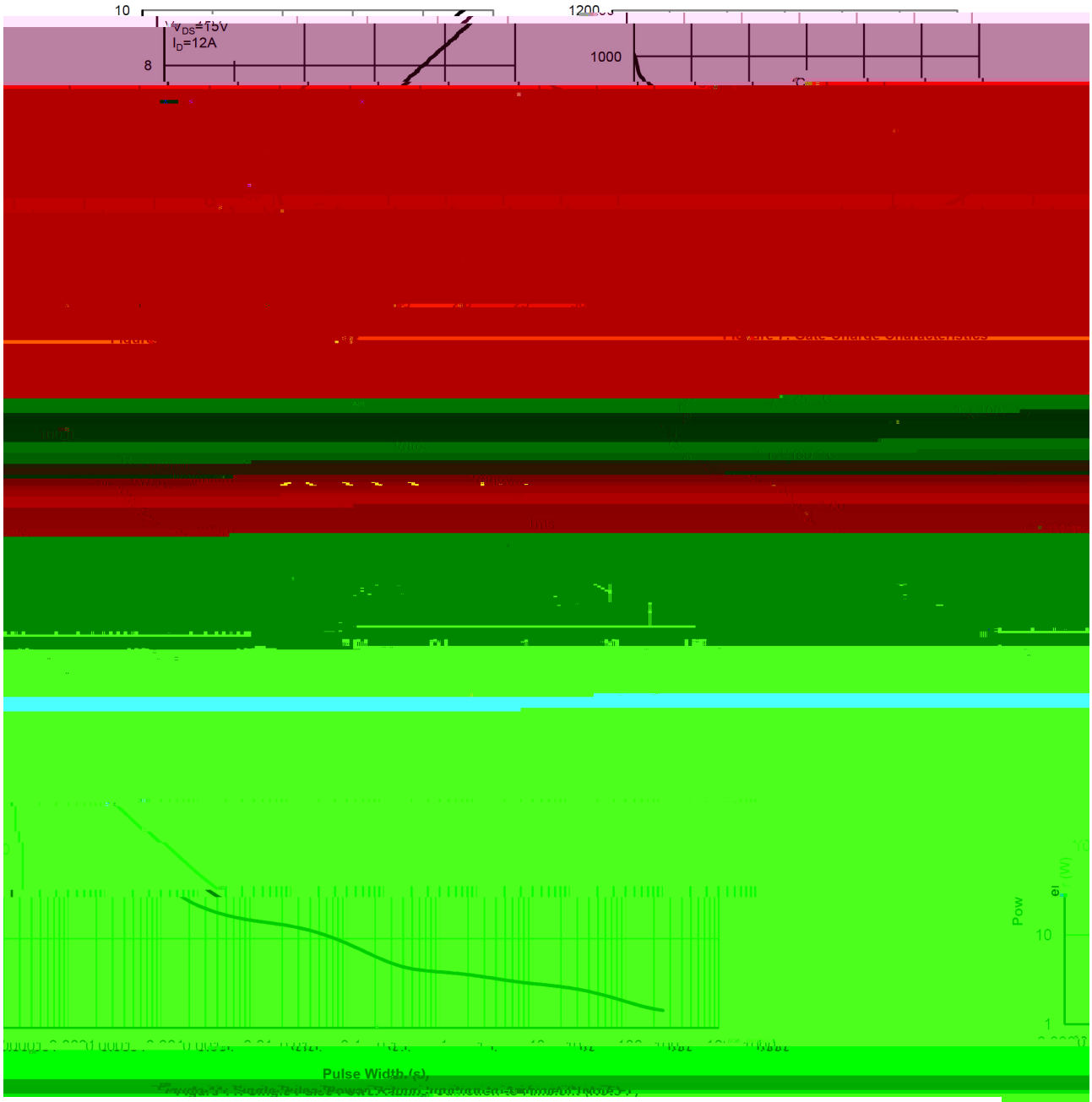
PIN1	S	PIN 2	S	PIN 3	S	PIN4	G
PIN 5	D	PIN 6	D	PIN 7	D	PIN 8	D

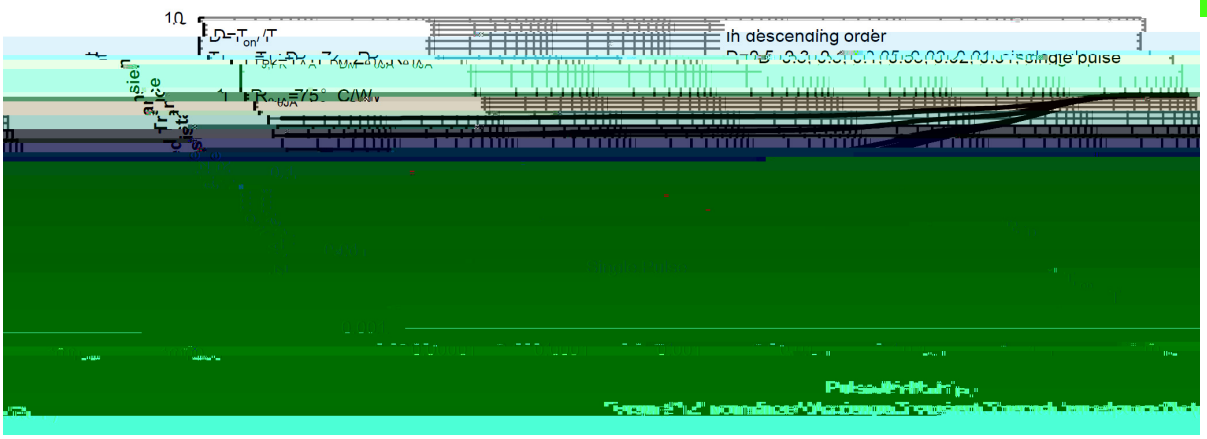
/ h_{FE} Classifications & Marking

See Marking Instructions.

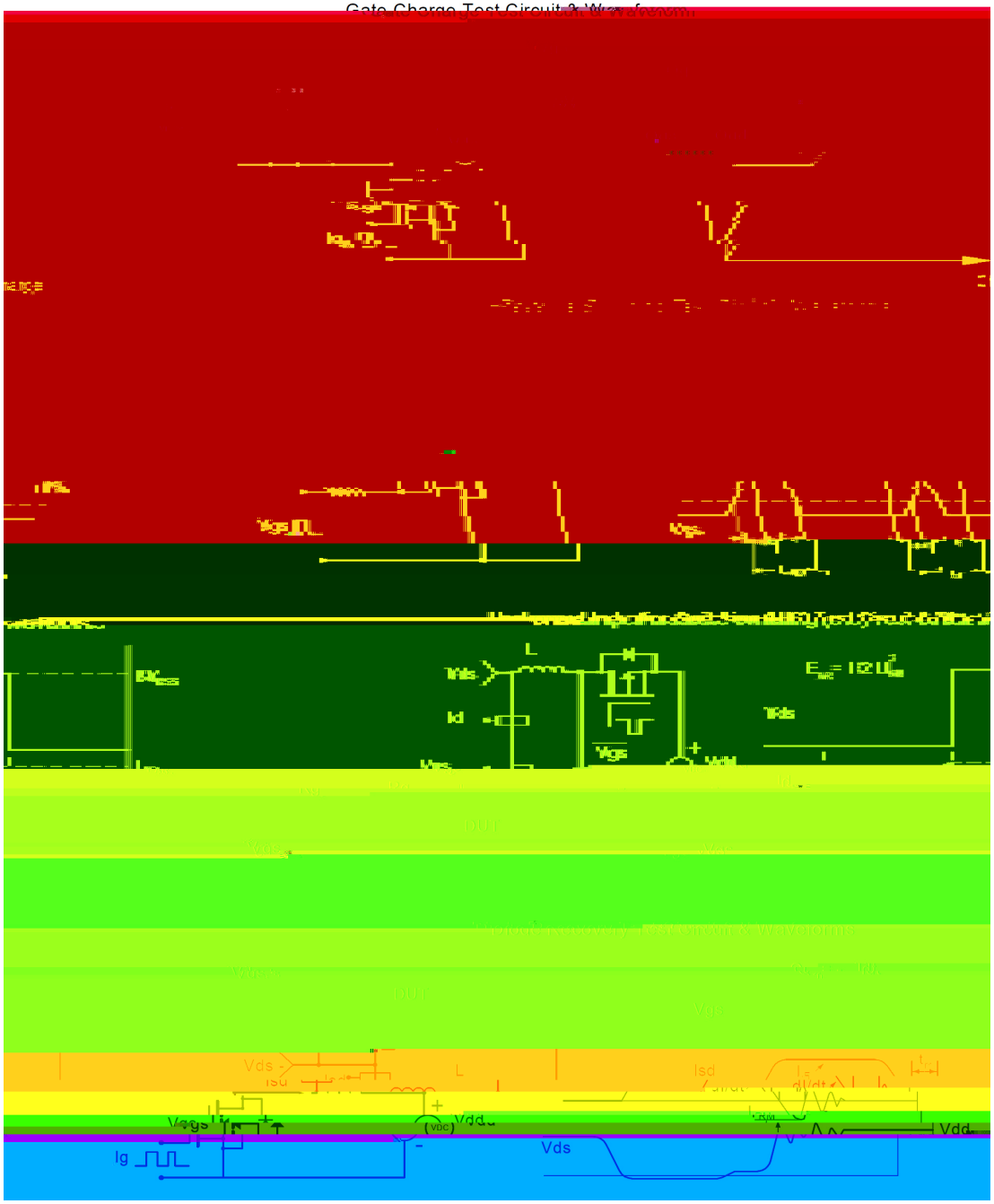
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250εA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1.0	εA
		V_{DS}=30V T_J=55	V_{GS}=0V			5.0	εA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250εA	1.5	1.9	2.5	V
On state drain current	$I_{D(on)}$	V_{DS}=5V	V_{GS}=10V	100			A
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=12A		9.5	11.5	mq
		V_{GS}=10V T_J=125	I_D=12A		14	17	mq
		V_{GS}=4.5V	I_D=10A		12.5	15.5	mq
Forward Transconductance	g_{FS}	V_{DS}=5.0V	I_D=12A		45		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=1.0A		0.75	1	V
Maximum Body-Diode Continuous Current	I_S					4	A
Input Capacitance	C_{iss}	V_{DS}=15V f=1.0MHz	V_{GS}=0V		760		pF
Output Capacitance	C_{oss}				125		pF
Reverse Transfer Capacitance	C_{rss}				70		pF
Gate resistance	R_g	V_{DS}=0V f=1.0MHz	V_{GS}=0V	0.8	1.6	2.4	Ω
Total Gate Charge(10V)	Q_g	V_{GS}=10V I_D=12A	V_{DS}=15V		14	25	nC
Total Gate Charge(4.5V)					6.6	12	nC
Gate-Source Charge	Q_{gs}				2.4		nC
Gate-Drain Charge	Q_{gd}				3		nC
Gate-Source Charge	Q_{gs}	V_{GS}=4.5V I_D=12A	V_{DS}=15V		2.4		nC
Gate-Drain Charge	Q_{gd}				3		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15 V R_L=1.25q	V_{GS}=10V R_{GEN}=3q		4.4		ns
Turn-On Rise Time	t_r				9		ns
Turn-Off Delay Time	$t_{d(off)}$				17		ns
Turn-Off Fall Time	t_f				6		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=12A dI/dt=100A/εs					

Electrical Characteristic Curve

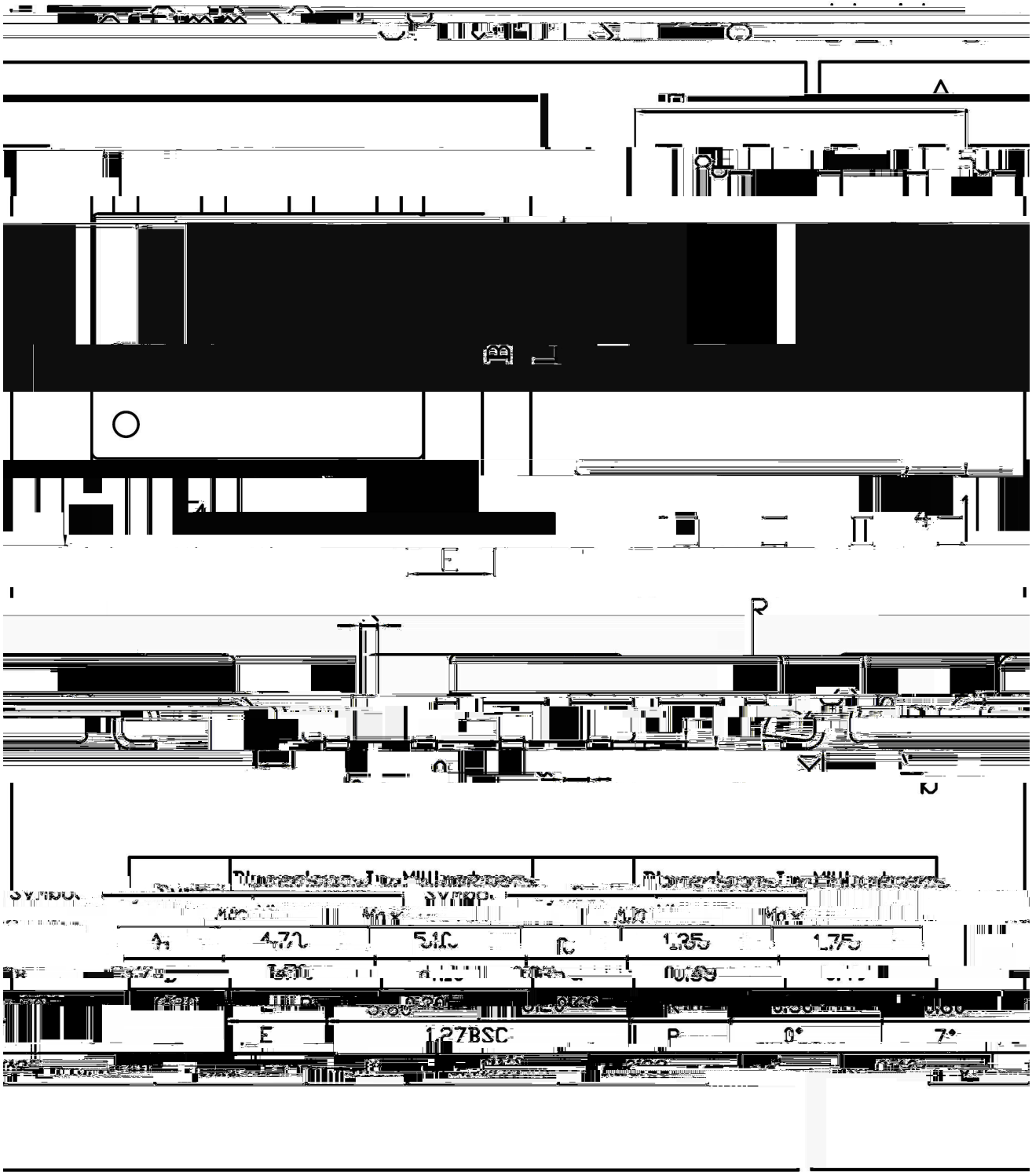




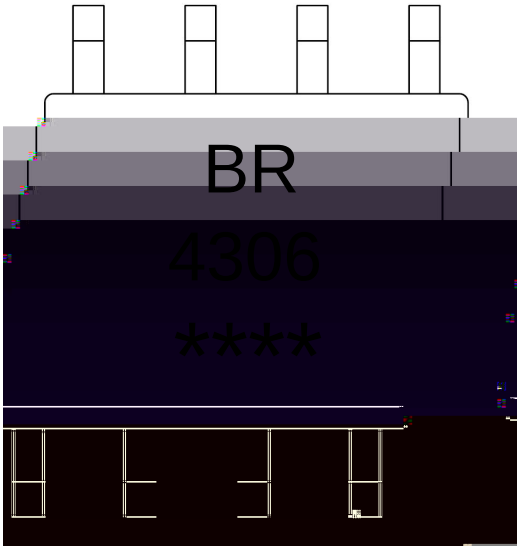
Gate Charge Test Circuit & Waveform



/ Package Dimensions



/ Marking Instructions



BR

4306

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Note:

BR:	Company Code.
4306:	Product Type.
****:	Lot No. Code, code change with Lot No.

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