

GSM9566W

40V P-Channel Enhancement Mode MOSFET

Product Description

GSM9566W, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

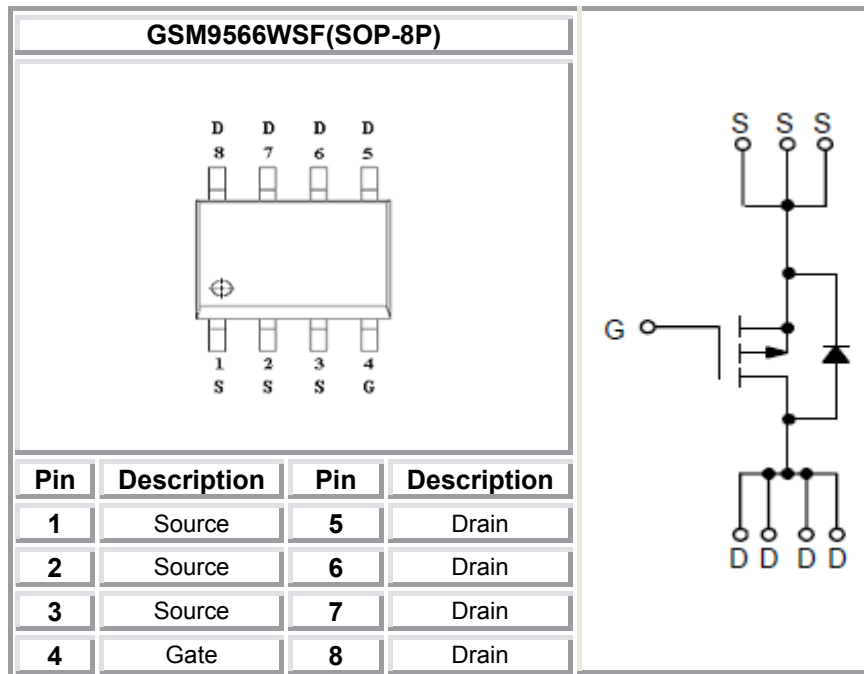
Features

- $-40V/-5.0A, R_{DS(ON)}=80m\Omega@V_{GS}=-10V$
- $-40V/-3.5A, R_{DS(ON)}=105m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

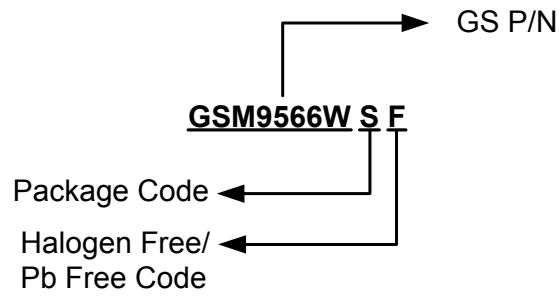
Applications

- Backlight Inverter for LCD Display
- Full Bridge DC/DC Converter
- Load Switch
- CCFL Inverter

Packages & Pin Assignments

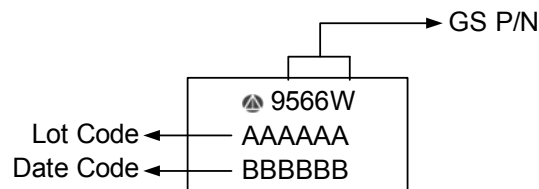


Ordering Information



Part Number	Package	Quantity Reel
GSM9566WSF	SOP-8P	2500 PCS

Marking Information



Absolute Maximum Ratings

$T_A=25^{\circ}\text{C}$ unless otherwise noted

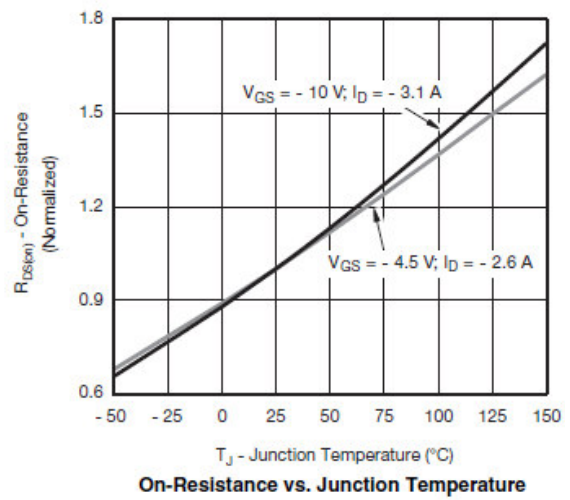
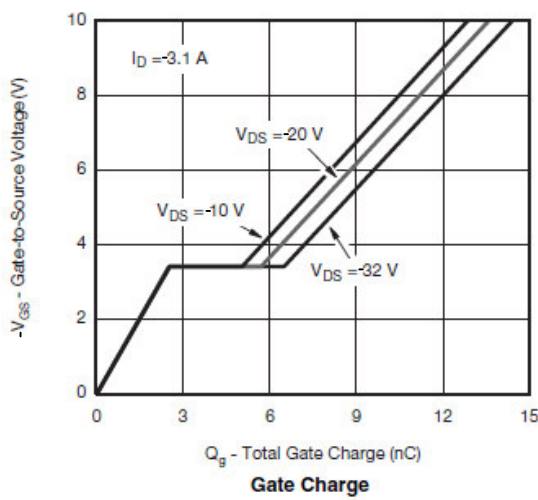
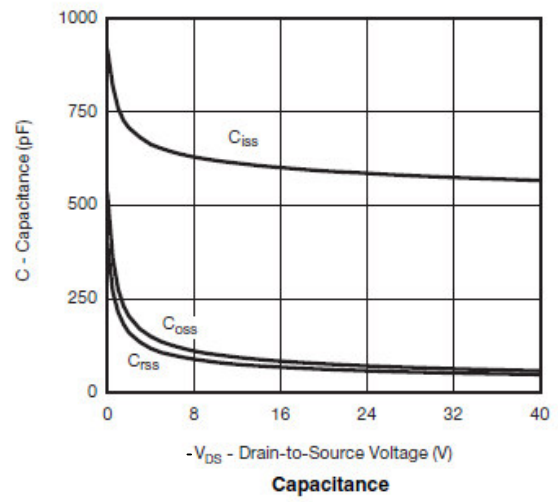
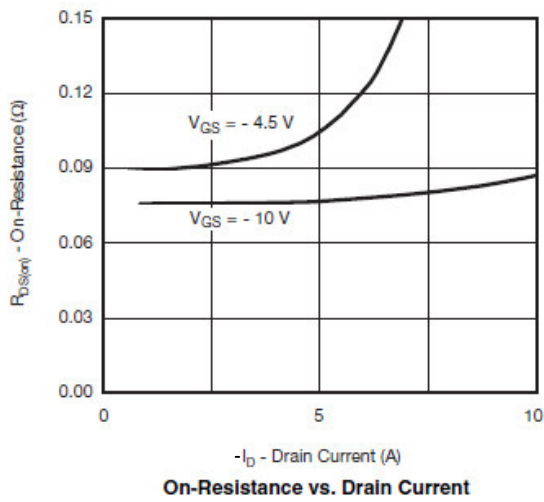
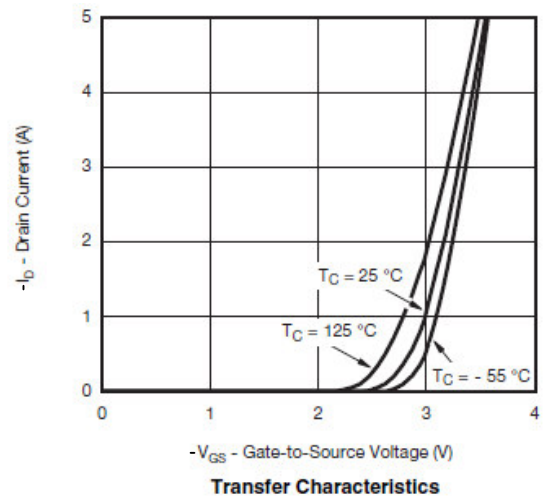
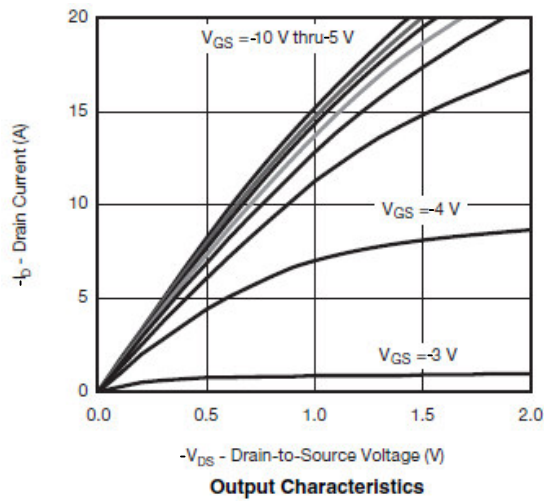
Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	-40	V
V_{GSS}	Gate –Source Voltage	± 20	V
I_D	Continuous Drain Current($T_J=150^{\circ}\text{C}$)	$T_A=25^{\circ}\text{C}$	-5.0
		$T_A=70^{\circ}\text{C}$	-3.5
I_{DM}	Pulsed Drain Current	-15	A
I_S	Continuous Source-Drain Diode Current	-2	
P_D	Power Dissipation	$T_A=25^{\circ}\text{C}$	2.8
		$T_A=70^{\circ}\text{C}$	1.8
T_J	Operating Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55/150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	62.5	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics

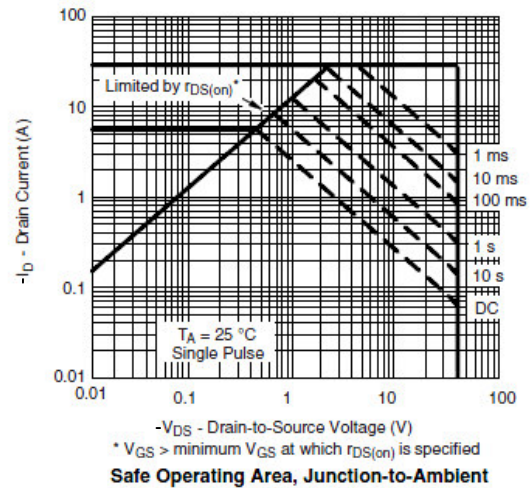
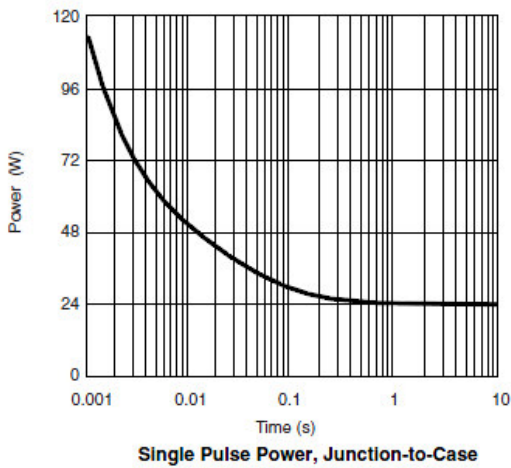
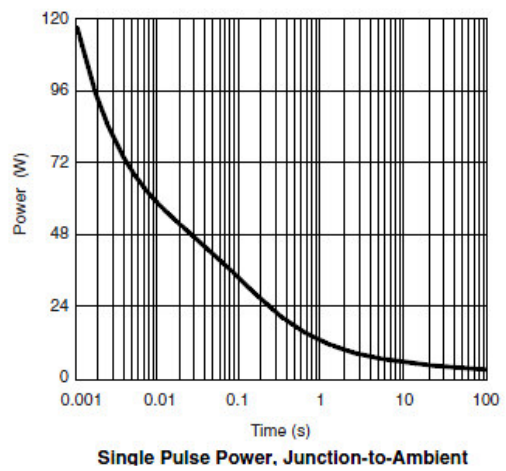
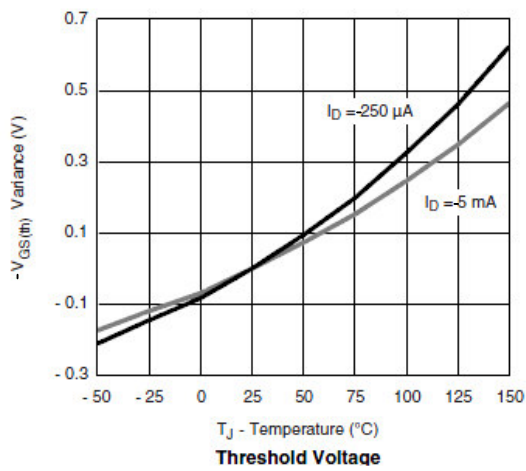
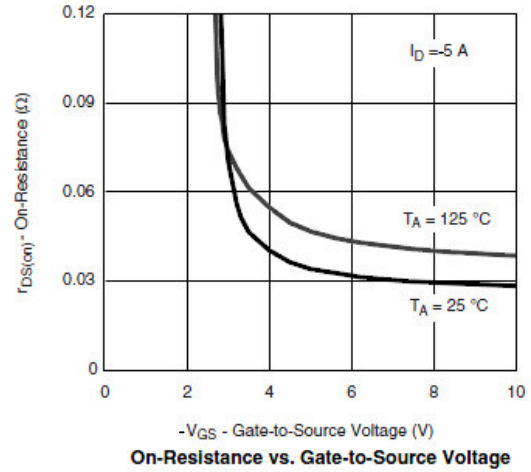
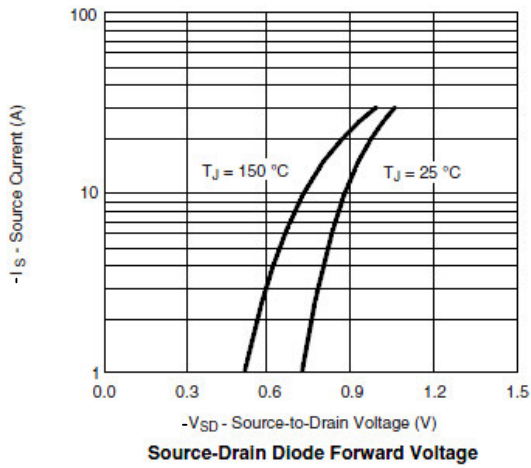
T_A=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-40			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1.0		-2.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-32V, V _{GS} =0V			-1	μA
		V _{DS} =-32V, V _{GS} =0V, T _J =85°C			-30	
I _{D(ON)}	On-State Drain Current	V _{DS} ≤ -5V, V _{GS} =-10V	-5			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-5.0A		68	80	mΩ
		V _{GS} =-4.5V, I _D =-3.5A		90	105	
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-3.0A		8		S
V _{SD}	Diode Forward Voltage	I _S =-1.25A, V _{GS} =0V		-0.75	-1.3	V
Dynamic						
C _{iss}	Input Capacitance	V _{DS} =-20V, V _{GS} =0V, f=1MHz		500		pF
C _{oss}	Output Capacitance			65		
C _{rss}	Reverse Transfer Capacitance			50		
Q _g	Total Gate Charge	V _{DS} =-20V, V _{GS} =-4.5V, I _D =-3.0A		5	10	nC
Q _{gs}	Gate-Source Charge			1.5		
Q _{gd}	Gate-Drain Charge			2.5		
t _{d(on)}	Turn-On Time	V _{DD} =-20V, R _L =8Ω, I _D =-2.5A, V _{GEN} =-4.5V, R _G =1.0Ω		25	50	ns
t _r				15	30	
t _{d(off)}	Turn-Off Time			10	25	
t _F				10	25	

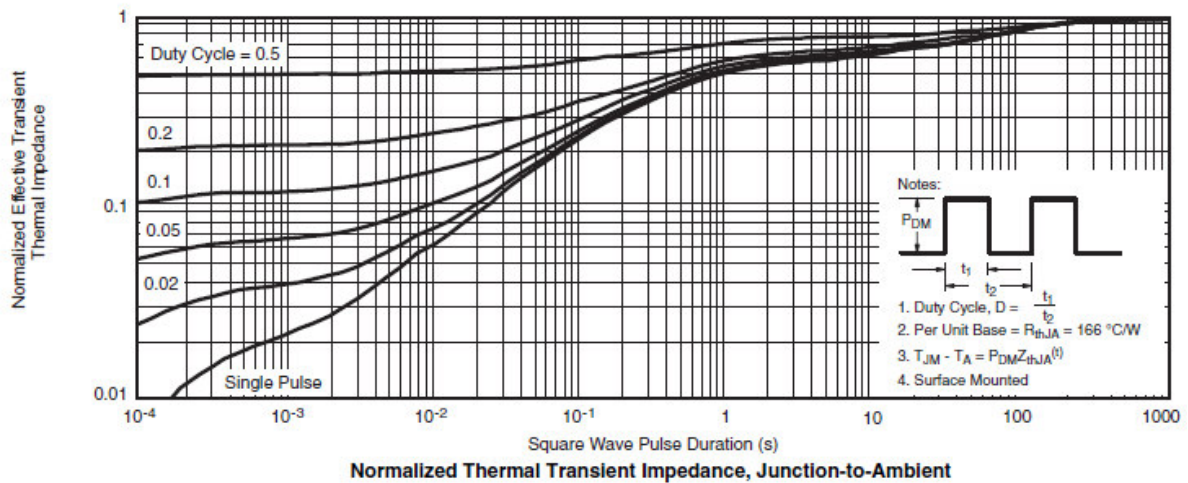
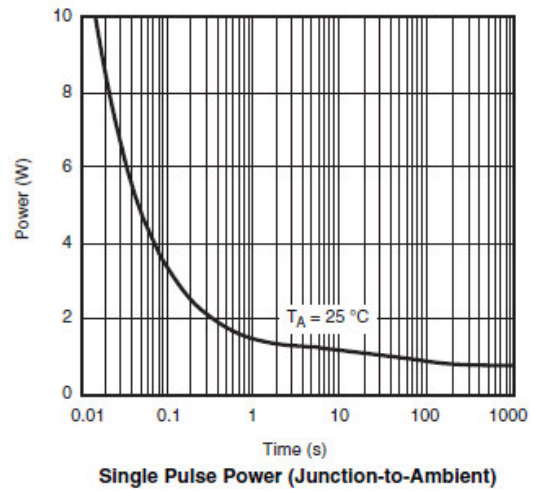
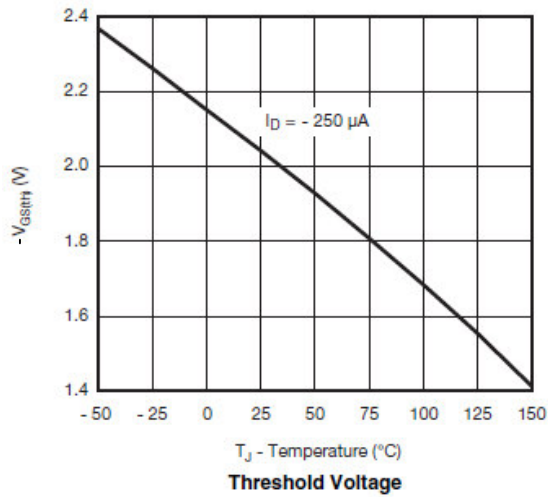
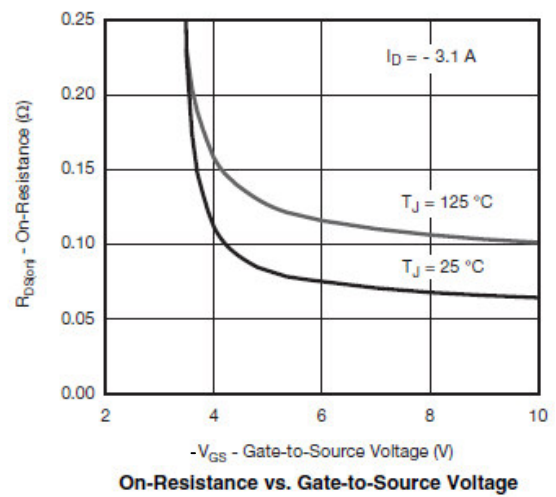
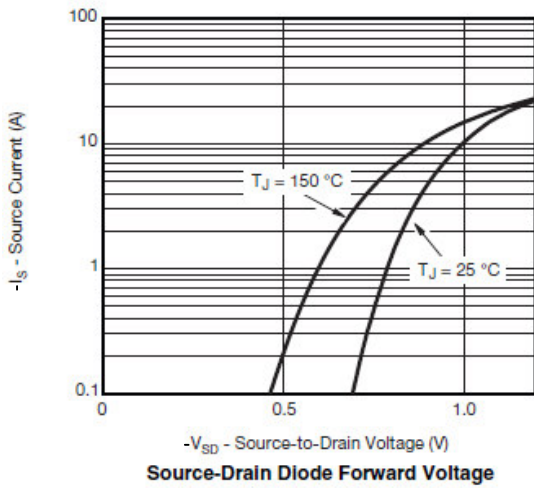
Typical Performance Characteristics



Typical Performance Characteristics (continue)

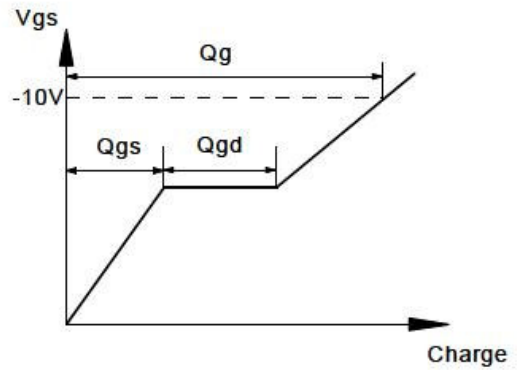
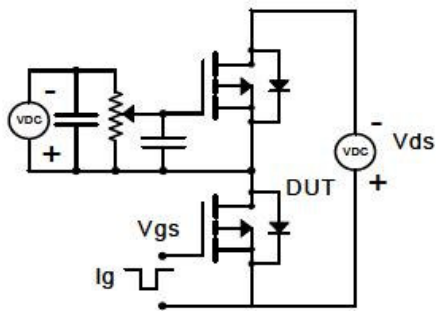


Typical Performance Characteristics (continue)

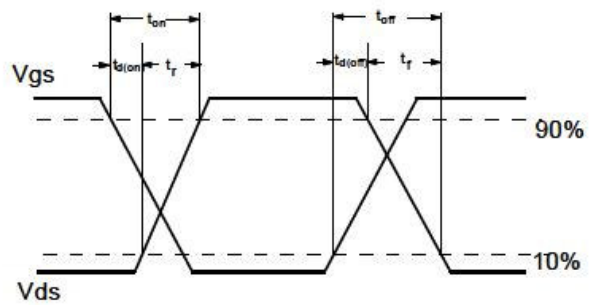
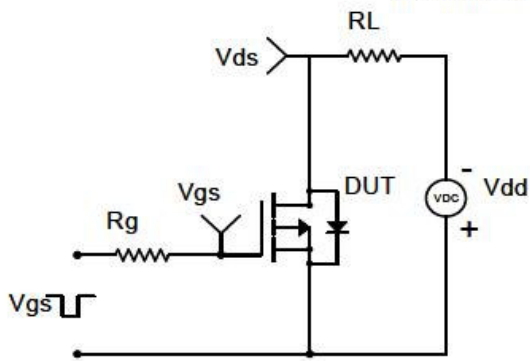


Typical Characteristics

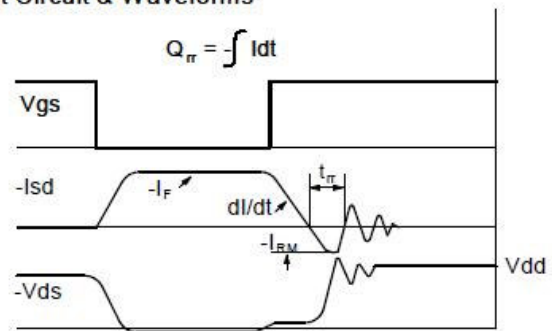
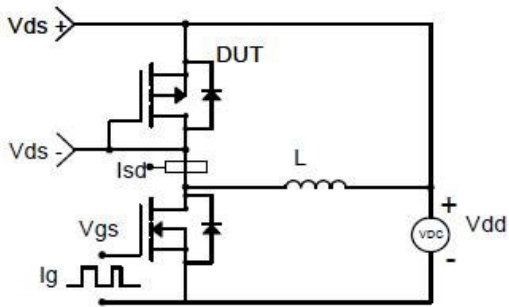
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

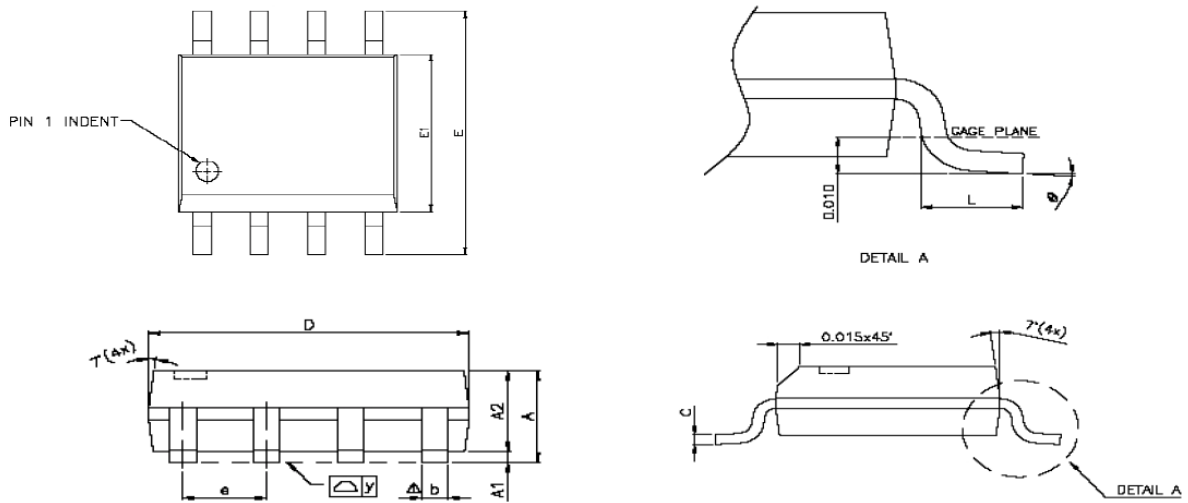


Diode Recovery Test Circuit & Waveforms



Package Dimension

SOP-8P PLASTIC PACKAGE



Dimensions						
Symbol	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	-	0.25	0.004	-	0.010
A2	-	1.45	-	-	0.057	-
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	-	1.27	-	-	0.050	-
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	-	-	0.076	-	-	0.003
θ	0°	-	8°	0°	-	8°


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