

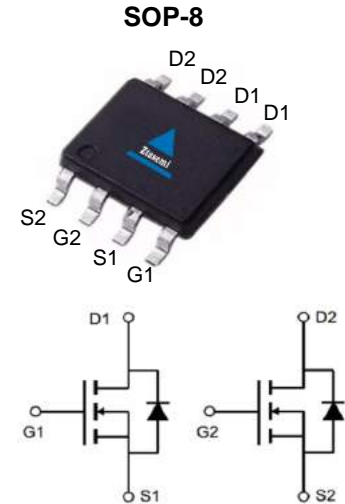
Features

- Dual N-Channel
- Excellent gate charge x RDS(on) product(FOM)
- Very low on-resistance RDS(on)
- 150 °C operating temperature
- Pb-free lead plating
- 100% EAS Tested

V_{DS}	100	V
$R_{DS(on),TYP}@ V_{GS}=10V}$	60	mΩ
$R_{DS(on),TYP}@ V_{GS}=4.5V}$	75	mΩ
I_D	5	A



Part ID	Package Type	Marking	Packing
ZTG70D10S	SOP-8	ZTG70D10S	4000pcs/reel



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$, unless otherwise specified

Symbol	Parameter	Rating	Unit
Common Ratings ($T_c=25^\circ\text{C}$ Unless Otherwise Noted)			
V_{GS}	Gate-Source Voltage	±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	100	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_{DM}	Drain Current-Continuous@ Current-Pulsed	$T_c = 25^\circ\text{C}$ 18	A
Mounted on Large Heat Sink			
I_D	Drain Current-Continuous	$T_c = 25^\circ\text{C}$ 5	A
P_D	Maximum Power Dissipation	3	W
$R_{\theta JC}$	Thermal Resistance-Junction to Case	31	°C/W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient (Note 1)	70	°C/W
Drain-Source Avalanche Ratings			
EAS	Avalanche Energy, Single Pulsed	50	mJ

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J=25°C (unless otherwise stated)						
V(BR)DSS	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.3	1.9	2.4	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =5A	--	60	75	mΩ
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =3A	--	75	95	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz	--	443	--	pF
C _{oss}	Output Capacitance		--	70	--	pF
C _{rss}	Reverse Transfer Capacitance		--	15.5	--	pF
Q _g	Total Gate Charge	V _{DS} =50V, I _D =5A, V _{GS} =10V	--	7.5	--	nC
Q _{gs}	Gate-Source Charge		--	1.5	--	nC
Q _{gd}	Gate-Drain Charge		--	1.3	--	nC
Switching Characteristics						
T _{d(on)}	Turn-on Delay Time	V _{DD} =50V, I _D =5A, R _G =2.5Ω, V _{GS} =10V	--	6	--	ns
T _r	Turn-on Rise Time		--	2.6	--	ns
T _{d(off)}	Turn-Off Delay Time		--	18	--	ns
T _f	Turn-Off Fall Time		--	2.6	--	ns
Source- Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _S	Diode Forward Current		--	--	5	A
V _{SD}	Forward on voltage (Note 4)	I _S =5A, V _{GS} =0V	--	--	1.2	V
T _{rr}	Reverse Recovery Time	T _J =25°C, I _F = 5A	--	32	--	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	--	41	--	nC

NOTE:

1. The value of R_{θJA} is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The value in any given application depends on the user's specific board design.

N-Ch1&N-Ch2 Typical Performance Characteristics

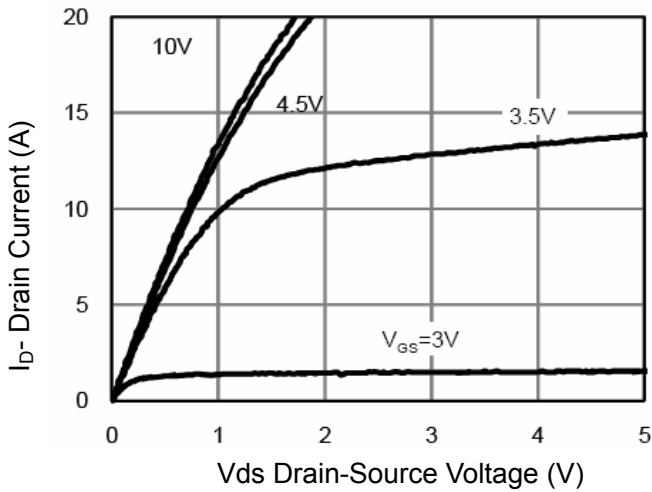


Figure 1 Output Characteristics

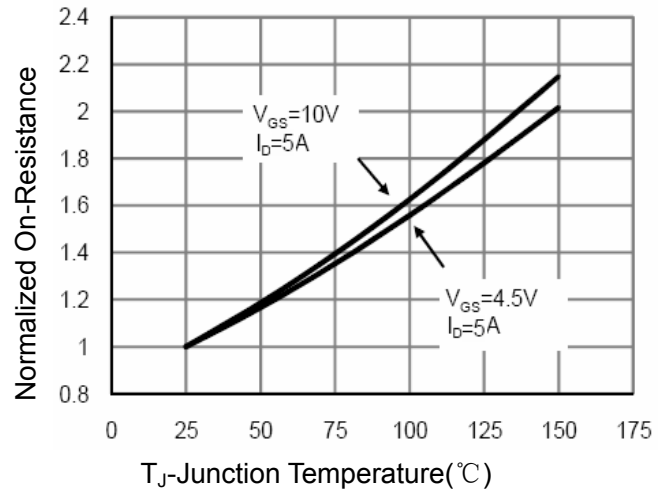


Figure 4 R_{dson} -Junction Temperature

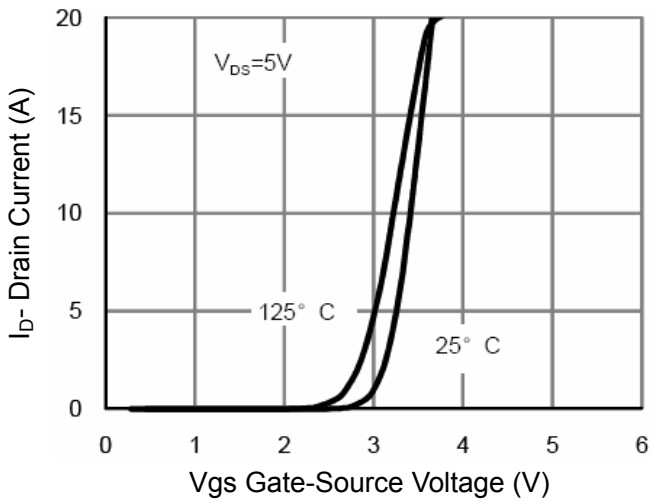


Figure 2 Transfer Characteristics

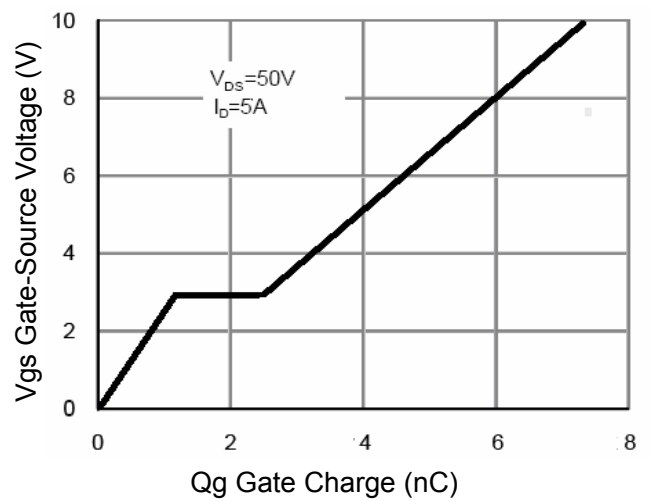


Figure 5 Gate Charge

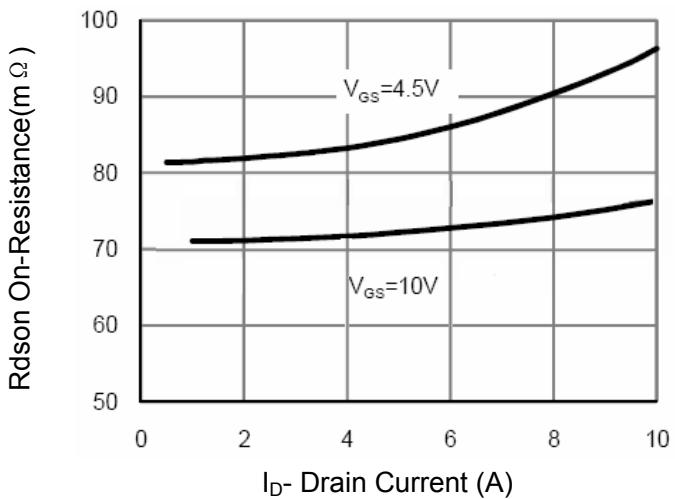


Figure 3 R_{dson} - Drain Current

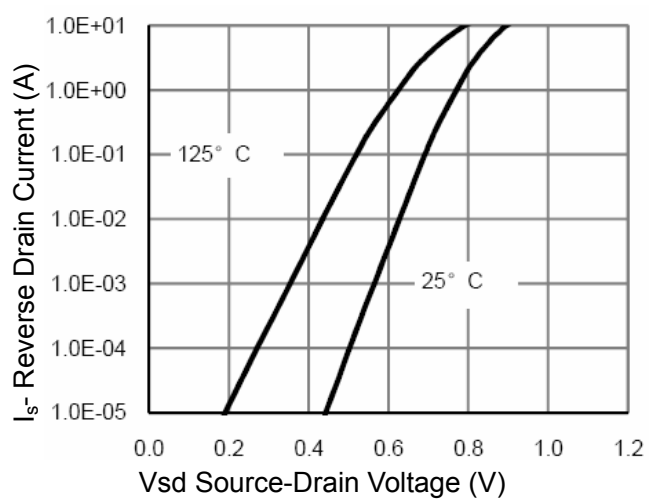
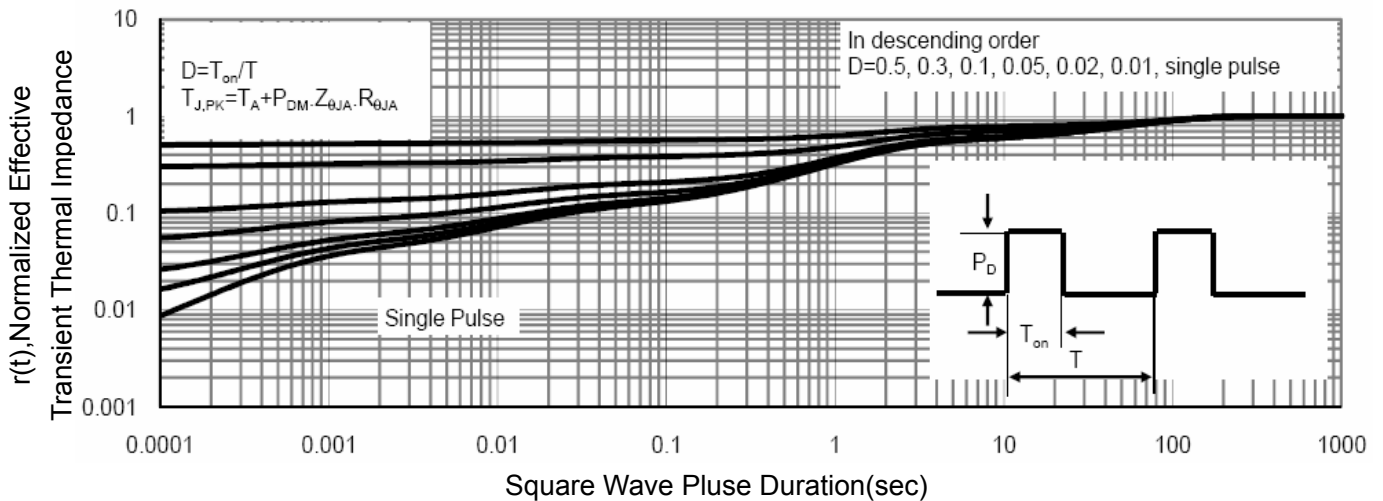
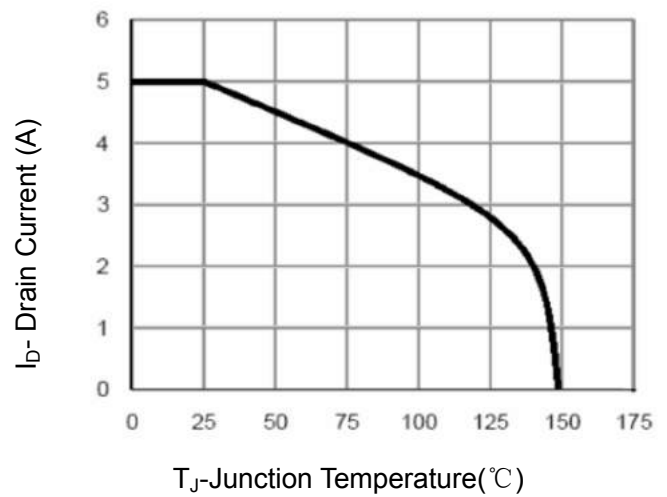
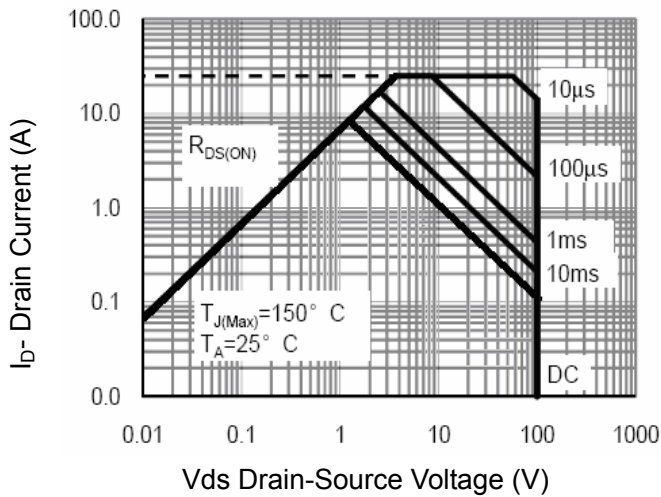
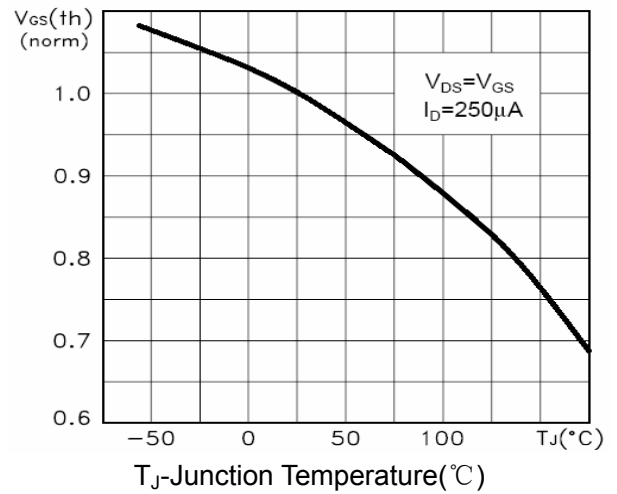
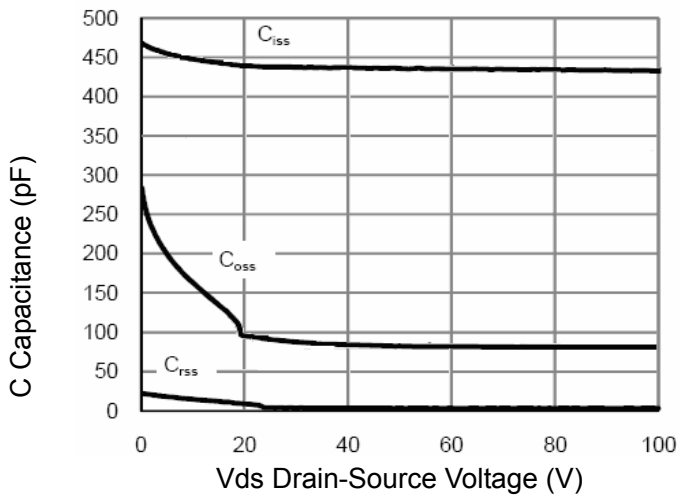
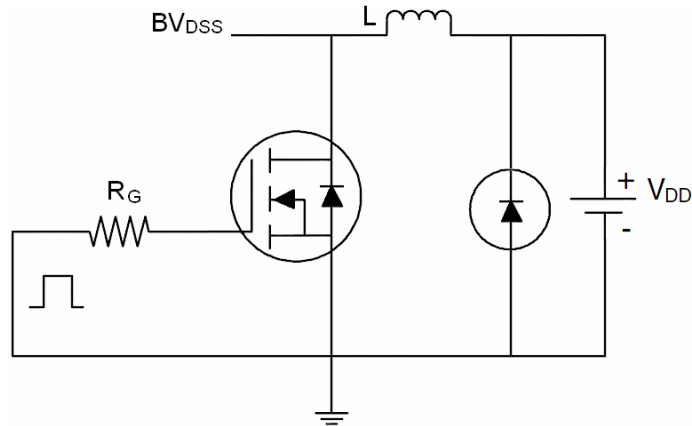


Figure 6 Source- Drain Diode Forward

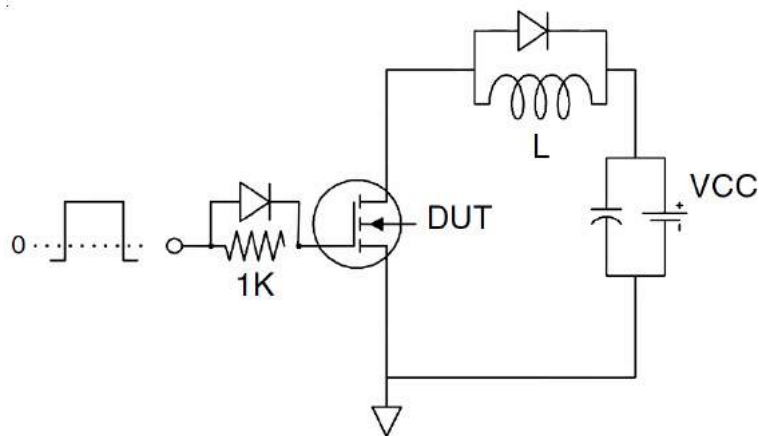


Test Circuit

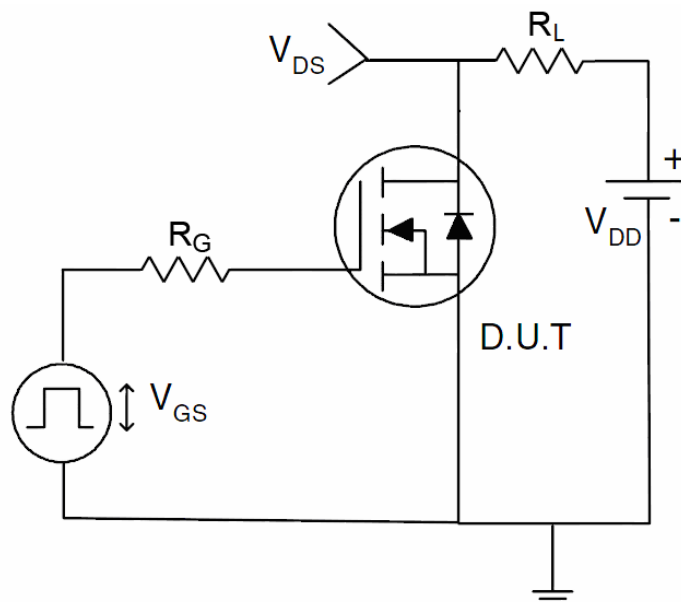
1) E_{AS} test circuit



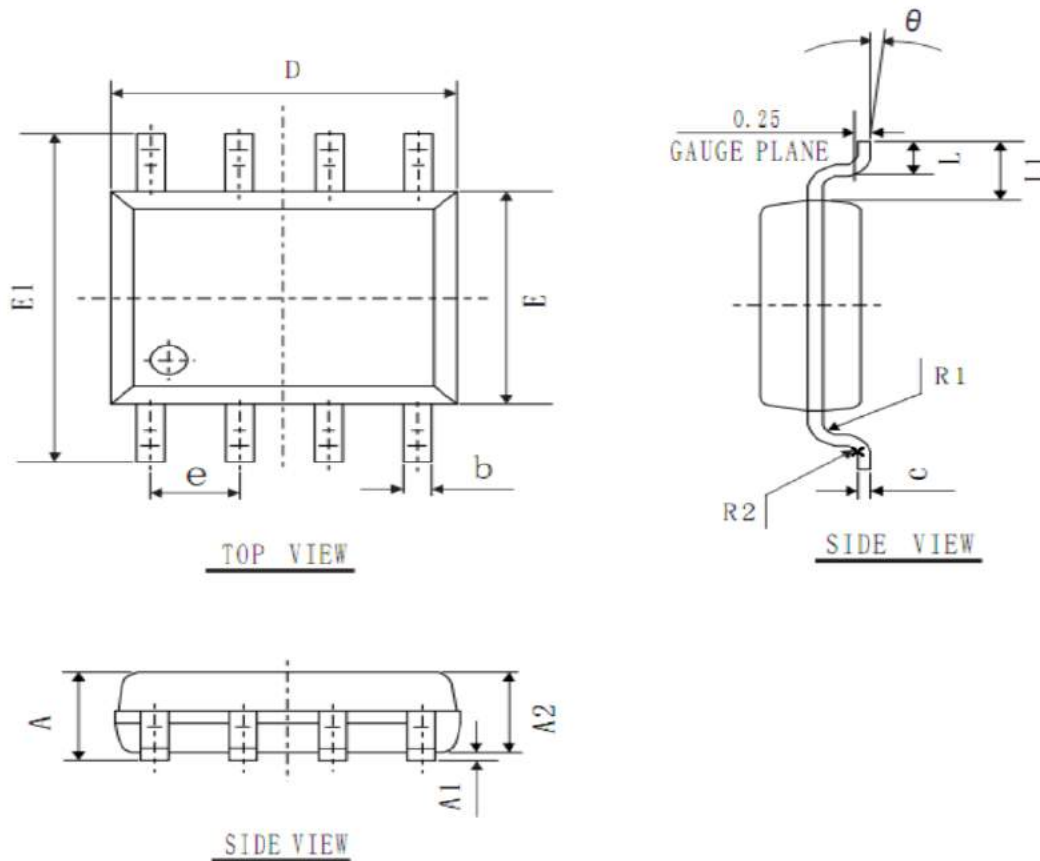
2) Gate charge test circuit



3) Switch Time Test Circuit



SOP-8 Package Information



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	1.40	1.60	1.80
A1	0.05	0.15	0.25
A2	1.35	1.45	1.55
b	0.30	0.40	0.50
c	0.153	0.203	0.253
D	4.80	4.90	5.00
E	3.80	3.90	4.00
E1	5.80	6.00	6.20
L	0.45	0.70	1.00
θ	2°	4°	6°
L1	1.04 REF		
e	1.27 BSC		
R1	0.07 TYP		
R2	0.07 TYP		

Customer Service

Sales and Service:

zj@ztasemi.com