Features

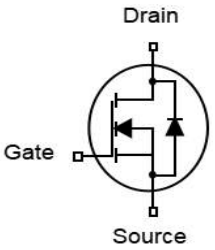
- N-Channel
- Excellent gate charge x $R_{DS(on)}$ product(FOM)
- Very low on-resistance $R_{DS(on)}$
- 150 °C operating temperature
- 100% EAS Tested

V_{DS}	60	V
$R_{DS(on),TYP}$@ V_{GS}=10 V	1.1	mΩ
$R_{DS(on),TYP}$@ V_{GS}=4.5 V	1.4	mΩ
I_D	240	A

DFN5x6

RoHS

Part ID	Package Type	Marking	Packing
ZTG011N06GC	DFN5x6	ZTG011N06GC	5000pcs/Reel



Absolute Maximum Ratings T_A =25°C, unless otherwise specified

Symbol	Parameter		Rating	Unit
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		60	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°C	800	A
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	T_C =25°C	240	A
		T_C =100°C	130	A
P_D	Maximum Power Dissipation		150	W
$R_{\theta JC}$	Thermal Resistance-Junction to Case		0.85	°C/W
Drain-Source Avalanche Ratings				
EAS	Avalanche Energy, Single Pulsed (Note 1)		520	mJ

Electrical Characteristics (T_J=25℃ 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	60	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V,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	1.2	1.6	2.0	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=10V, I_D=50A	--	1.1	1.3	mΩ
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=4.5V, I_D=45A	--	1.4	1.7	mΩ
Dynamic Electrical Characteristics @ T_j = 25°C (unless otherwise stated)						
Ciss	Input Capacitance	V_{DS}=30V,V_{GS}=0V, f=1MHz	--	7200	--	pF
Coss	Output Capacitance		--	1470	--	pF
Crss	ReverseTransferCapacitance		--	30	--	pF
Rg	Gate Resistance	f=1MHz	--	1.5	--	Ω
Qg	Total Gate Charge	V_{DS}=30V,I_D=50A, V_{GS}=4.5V	--	49	--	nC
Qgs	Gate-SourceCharge		--	23	--	nC
Qgd	Gate-DrainCharge		--	15	--	nC
Switching Characteristics (Note 2)						
Td(on)	Turn-on Delay Time	V_{DD}=30V, I_D =50A, R_G=2.5Ω, V_{GS}=4.5V	--	38	--	ns
Tr	Turn-on Rise Time		--	34	--	ns
Td(off)	Turn-Off Delay Time		--	52	--	ns
Tf	Turn-Off Fall Time		--	26	--	ns
Source- Drain Diode Characteristics@ T_j = 25°C (unless otherwise stated)						
I_S	Diode Forward Current		--	--	240	A
V_{SD}	Forward on voltage	I_S =50A,V_{GS}=0V	--	--	1.4	V
Trr	Reverse Recovery Time	T_j=25℃,I_S =50A, V_R =50V di/dt=100A/μs	--	68	--	ns
Qrr	Reverse Recovery Charge		--	122	--	nC

Notes:

1. EAS condition : Tj=25℃,V_{DD}=50V,V_G=10V,L=0.5mH,Rg=25Ω
2. Guaranteed by design, not subject to production
3. These curves are based on the junction-to-case thermal impedance which is measured with the device mounted to a large heatsink, assuming a maximum junction temperature of T_J(MAX)=150°C. The SOA curve provides a single pulse rating.

Typical Electrical and Thermal Characteristics

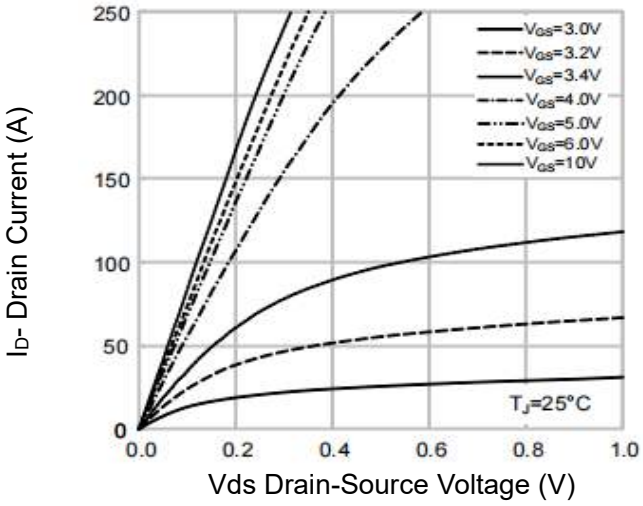


Figure 1 Output Characteristics

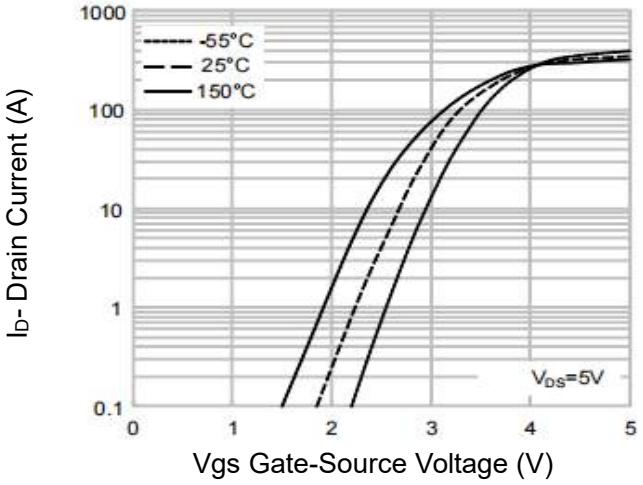


Figure 2 Transfer Characteristics

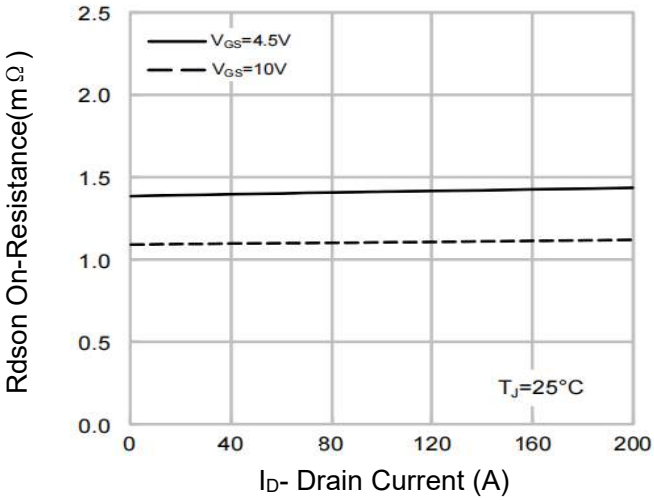


Figure 3 Rdson- Drain Current

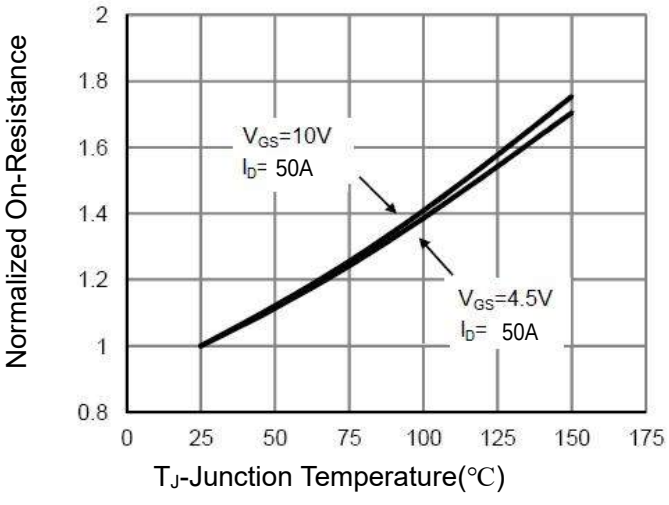


Figure 4 Rdson-JunctionTemperature

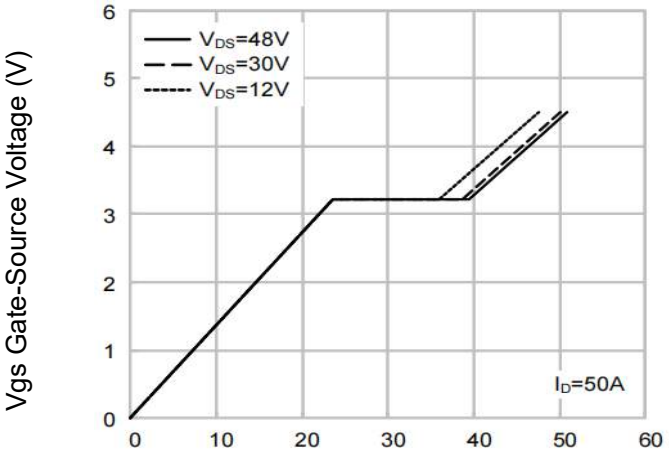


Figure 5 Gate Charge

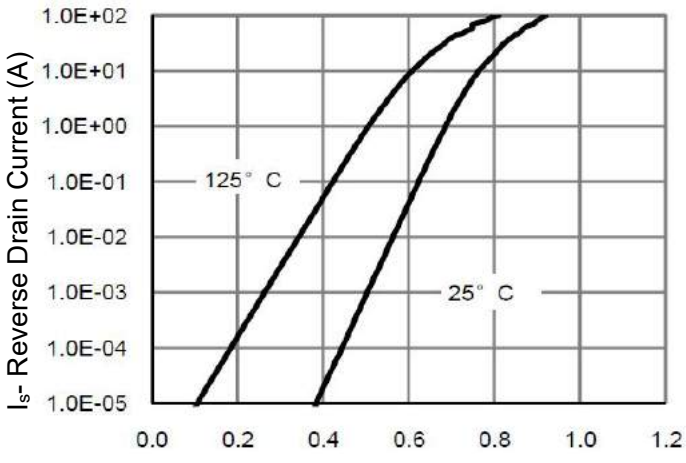


Figure 6 Source- Drain Diode Forward

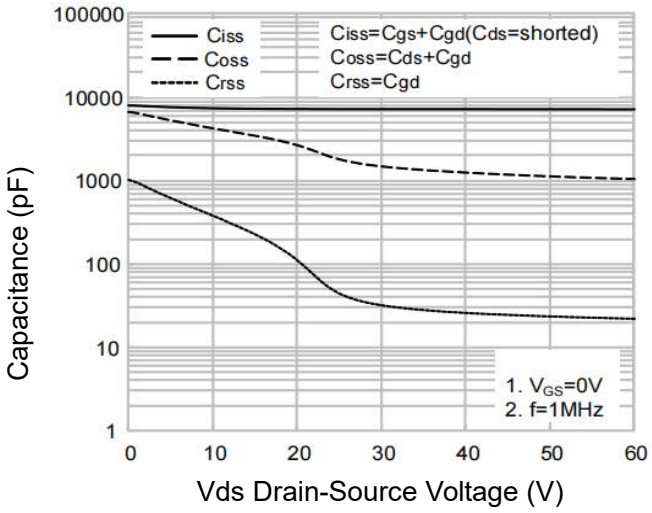


Figure 7 Capacitance vs Vds

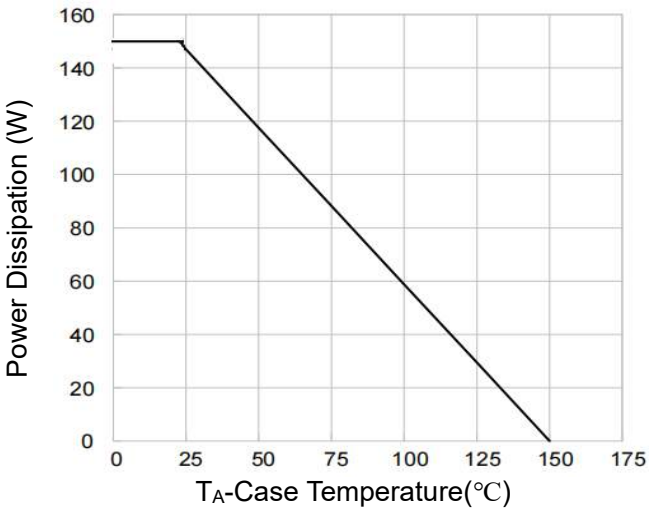


Figure 9 Power De-rating

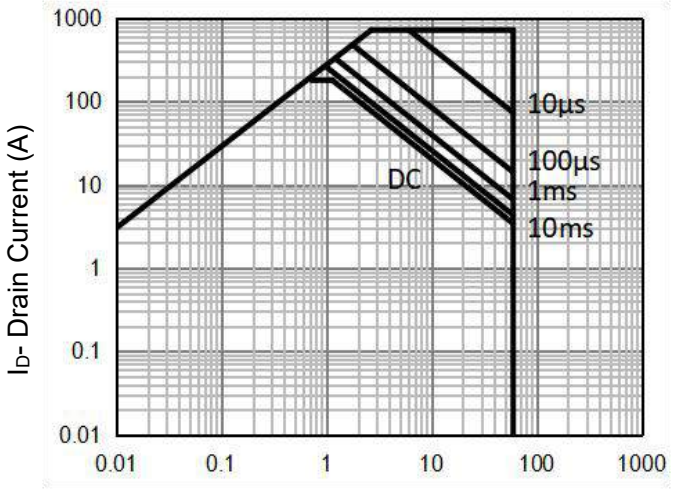


Figure 8 Safe Operation Area(Note 3)

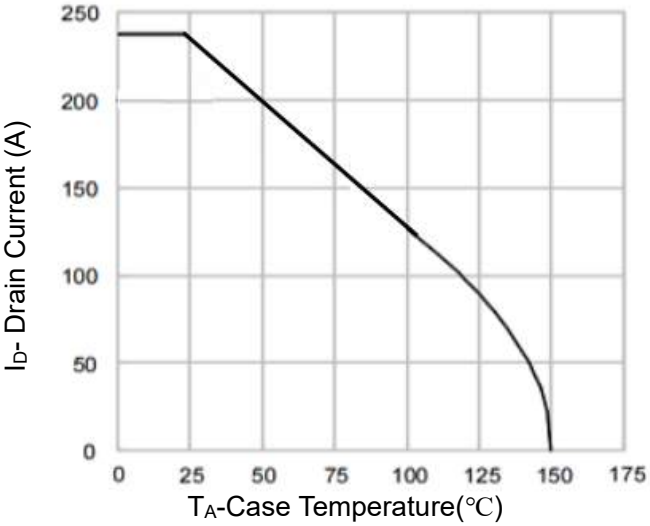


Figure 10 Current De-rating

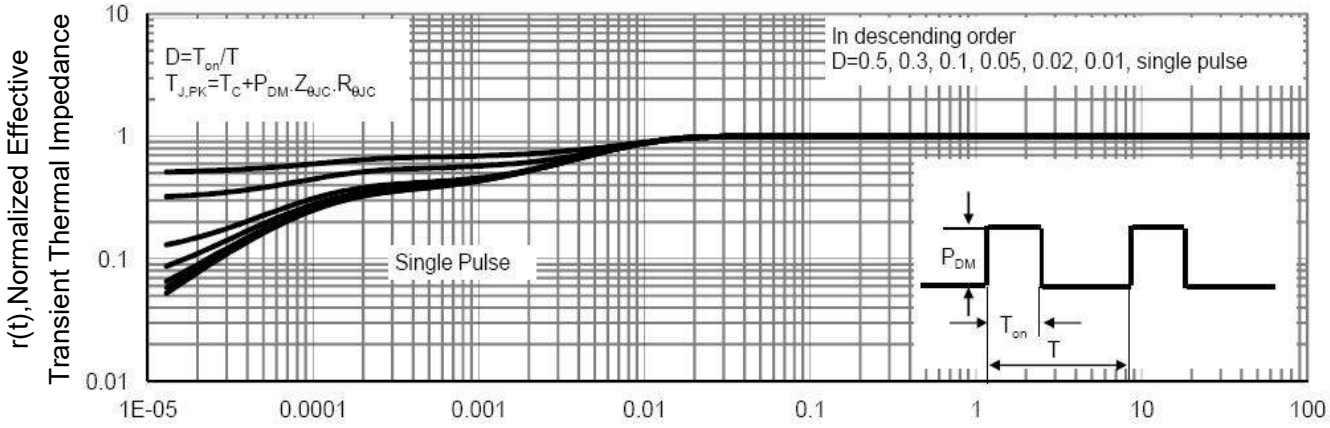
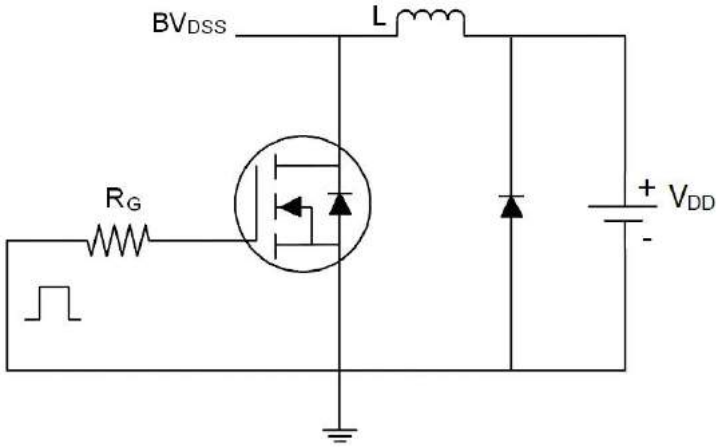


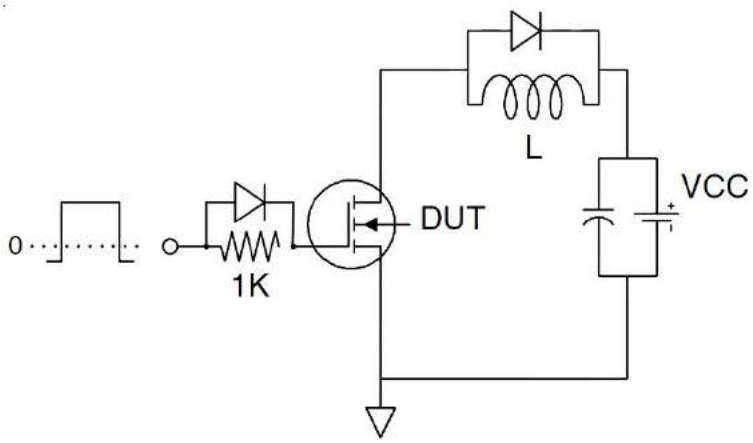
Figure 11 Normalized Maximum Transient Thermal Impedance

Test Circuit

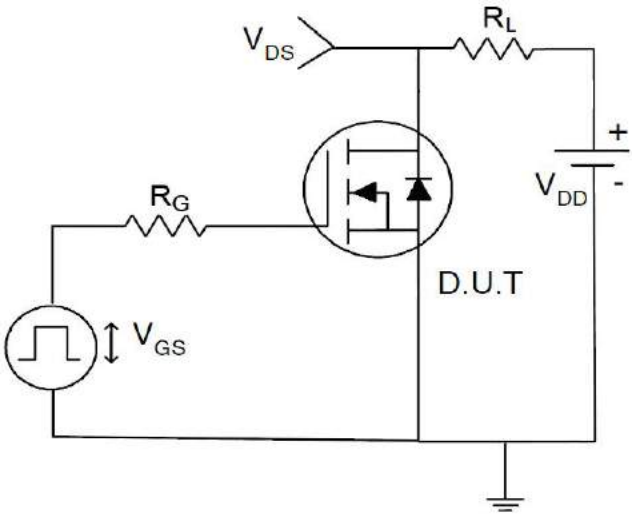
1) E_{AS} test Circuit



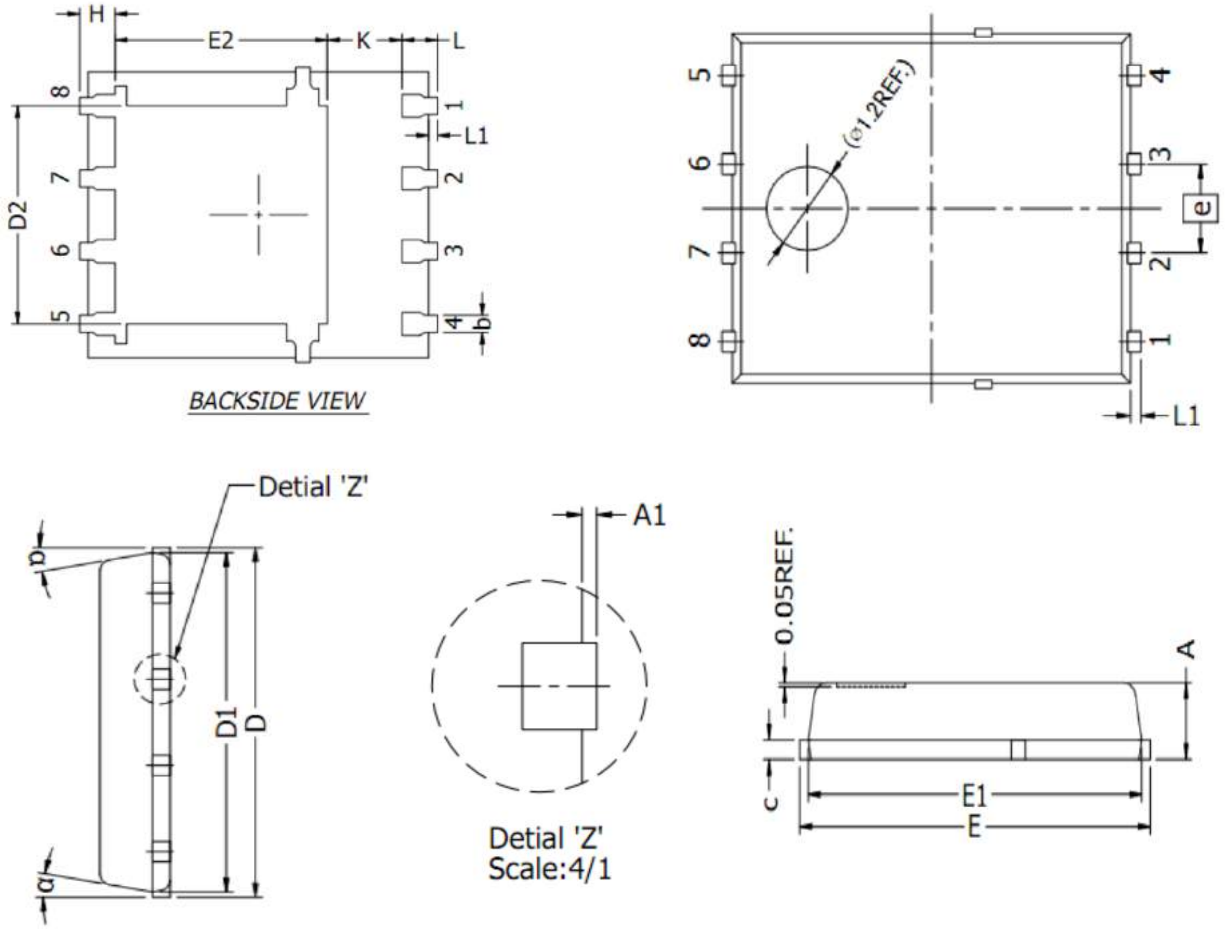
2) Gate charge test Circuit



3) Switch Time Test Circuit



DFN5x6-8L Package Information



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0	-	0.05
b	0.30	0.40	0.50
c	0.20	0.25	0.30
D	5.15 BSC		
D1	5.00 BSC		
D2	3.76	3.81	3.86
E	6.15 BSC		
E1	5.80	5.85	5.90
E2	3.45	3.65	3.85
e	1.27 BSC		
H	0.51	0.61	0.71
K	1.10	-	-
L	0.51	0.61	0.71
L1	0.08	0.15	0.23
α	10°	11°	12°

Customer Service

Sales and Service:

zj@ztasemi.com