SOP-8 MOS

Complementary Enhancement MOSFET in a SOP-8 Plastic Package.

N-channel	P-channel
V_{DS}(V)=60V	V_{DS}(V)=-60V
I_D=9.7A	I_D-3.4A
$R_{DS(ON)}$<16mΩ (V_{GS}=10V)	$R_{DS(ON)}$<100mΩ (V_{GS}=-10V)
$R_{DS(ON)}$<22mΩ (V_{GS}=4.5V)	$R_{DS(ON)}$<130mΩ (V_{GS}=-4.5V)

AEC-Q101 Qualified to AEC-Q101 Standards for High Reliability, HF Product.

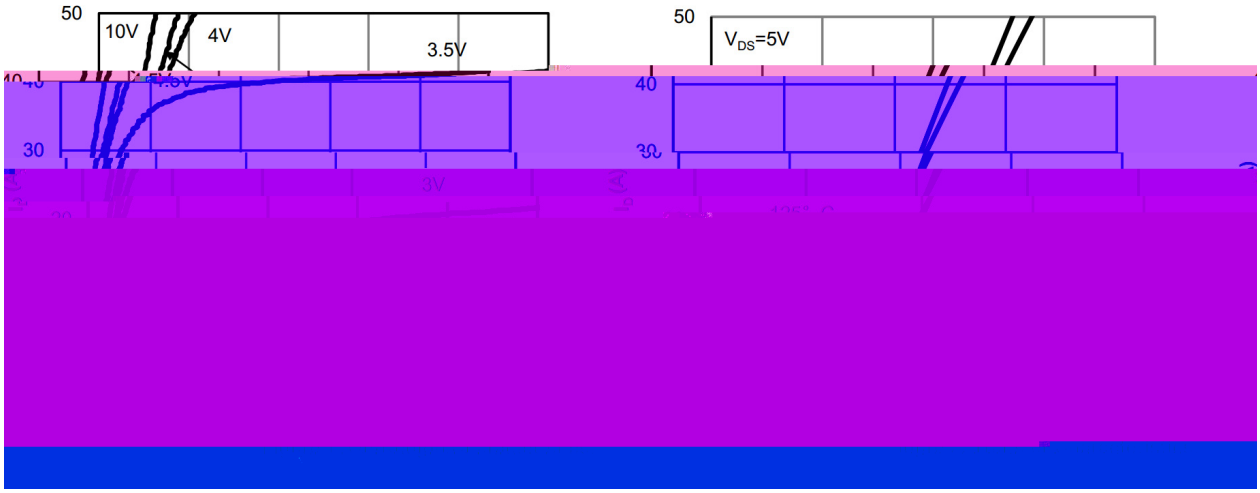
DC/DC · / ú (

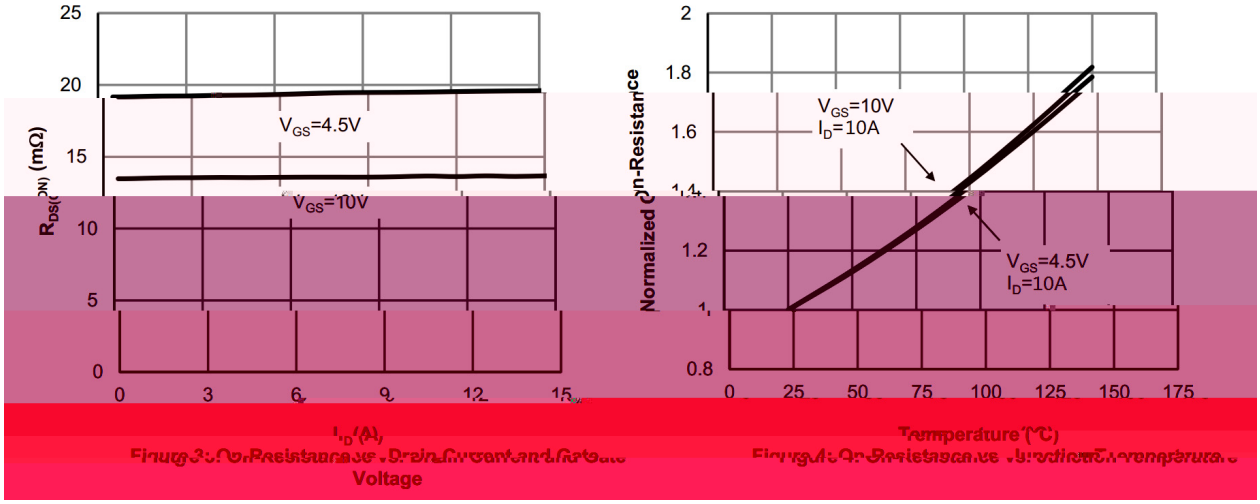
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol		Rating		Unit
			N-channel	P-channel	
Drain-Source Voltage	V_{DSS}		60	-60	V
Gate-Source Voltage	V_{GSS}		±20		V
Continuous Drain Current	I_D (T_A=25)		9.7	-3.4	A
Pulsed Drain Current	I_{DM}		±40		A
Power Dissipation	P_D (T_A=25℃)		2.7	1.9	W
Maximum Junction-to-Ambient	$R_{\theta JA}$	t≤10s	46.3	65.8	℃/W
		Steady-State	72	100	℃/W
Junction and Storage Temperature Range	T_J,T_{STG}		-55 to +150		℃

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	60	68		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V	V_{GS}=0V			1.0	μA
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=250μA	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=10A		14	16	mΩ
		V_{GS}=4.5V	I_D=10A		17.5	22	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=1.0A			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		570		pF
Output Capacitance	C_{oss}				310		pF
Reverse Transfer Capacitance	C_{rss}				11		pF
Gate resistance	R_g	V_{DS}=0V f=1.0MHz	V_{GS}=0V		1.5		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V I_D=9.7A	V_{DS}=30V		13.5		nC
Total Gate Charge	$Q_{g(4.5V)}$				6.5		nC
Gate-Source Charge	Q_{gs}				2.5		nC

N- / N-CHANNEL Electrical Characteristic Curve





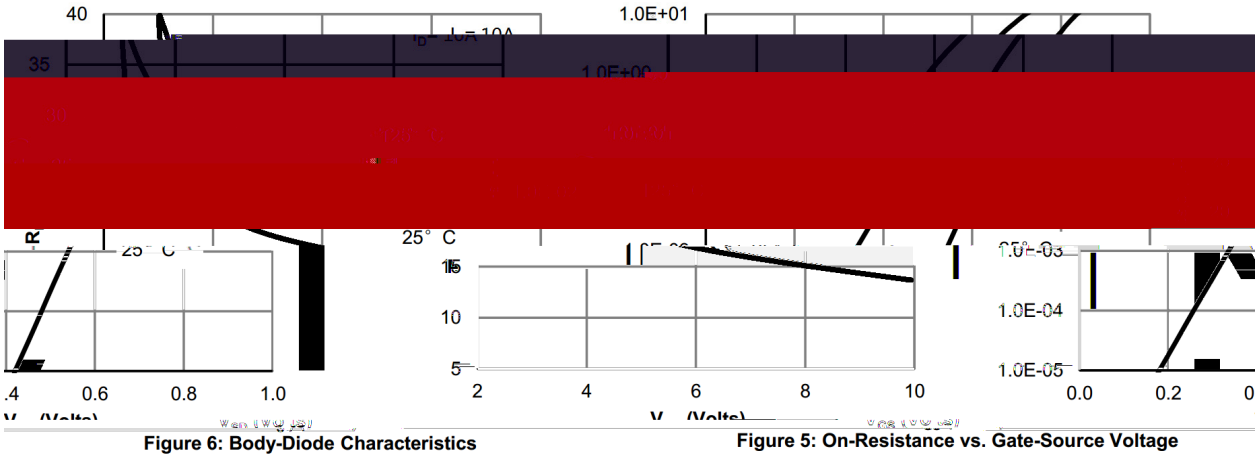
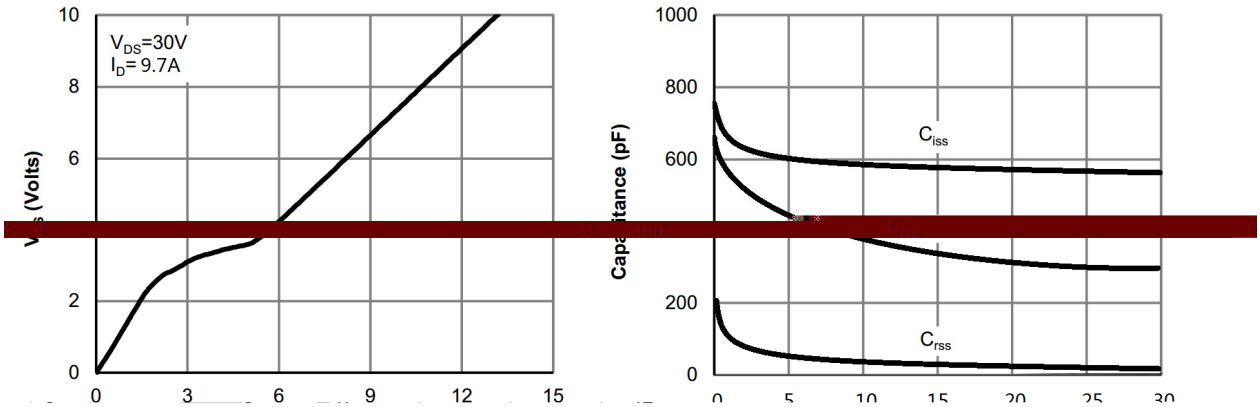


Figure 6: Body-Diode Characteristics

Figure 5: On-Resistance vs. Gate-Source Voltage

N- / N-CHANNEL Electrical Characteristic Curve



teristics

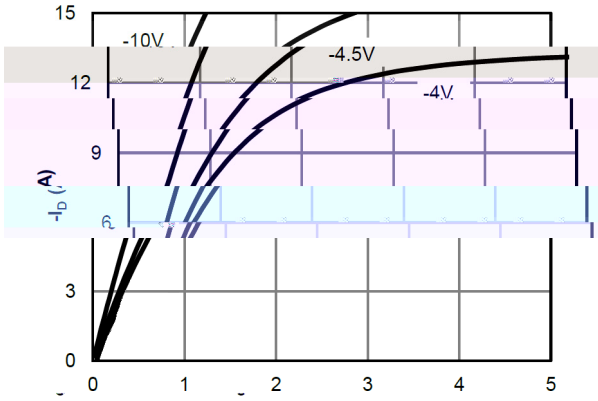
Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Charac

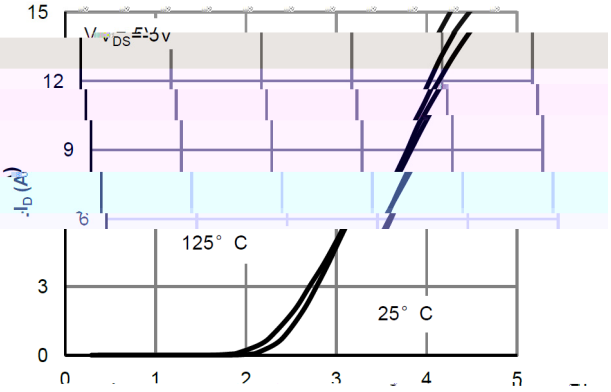
P- /P-CHANNEL Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-60	-71		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V V_{GS}=0V			-1.0	μA
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=-250μA	-1.0	-1.7	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V I_D=-10A		87	100	mΩ
		V_{GS}=-4.5V I_D=-10A		104	130	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1.0A			-1.0	V
Input Capacitance	C_{iss}	V_{DS}=-25V V_{GS}=0V f=1.0MHz		1170		pF
Output Capacitance	C_{oss}			60		pF
Reverse Transfer Capacitance	C_{rss}			45		pF
Gate resistance	R_g	V_{DS}=0V V_{GS}=0V f=1.0MHz		5.5		Ω
Total Gate Charge	$Q_{g(-10V)}$	V_{GS}=-10V V_{DS}=-30V I_D=-3.4A		12.3		nC
Total Gate Charge	$Q_{g(-4.5V)}$			6.3		nC
Gate-Source Charge	Q_{gs}			1.6		nC
Gate-Drain Charge	Q_{gd}			2.4		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-30V V_{GS}=-10V R_L=5.4Ω R_{GEN}=3Ω		12		ns
Turn-On Rise Time	t_r			20		ns
Turn-Off Delay Time	$t_{d(off)}$			20		ns
Turn-Off Fall Time	t_f			25		ns

P- / P-CHANNEL Electrical Characteristic Curve



(Volts)
er Characteristics



-V_DS (Volts)
Figure 1: On-Region Characteristics

-V_GS
Figure 2: Transf

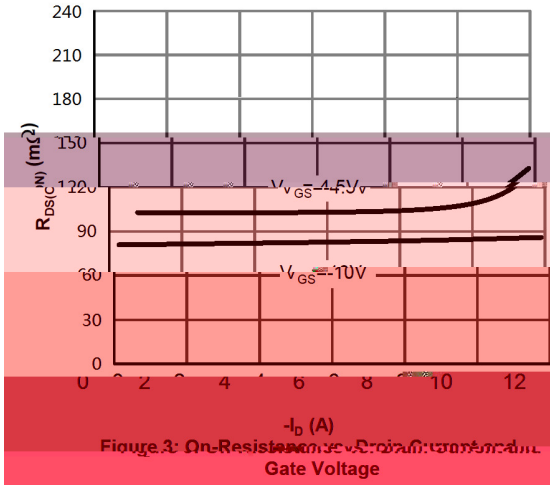


Figure 3: On-Resistance vs. Drain Current and
Gate Voltage

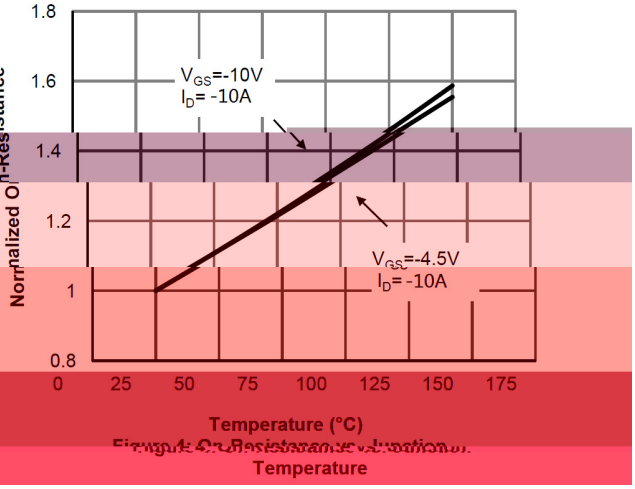
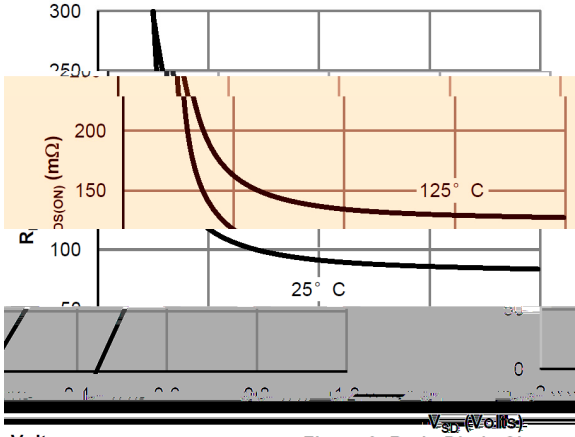


Figure 4: On-Resistance vs. Junction
Temperature



Voltage

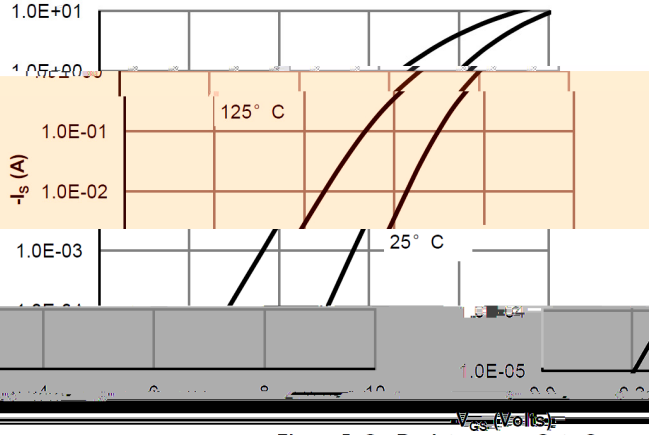


Figure 6: Body-Diode Characteristics

Figure 5: On-Resistance vs. Gate-Source

P- / P-CHANNEL Electrical Characteristic Curve

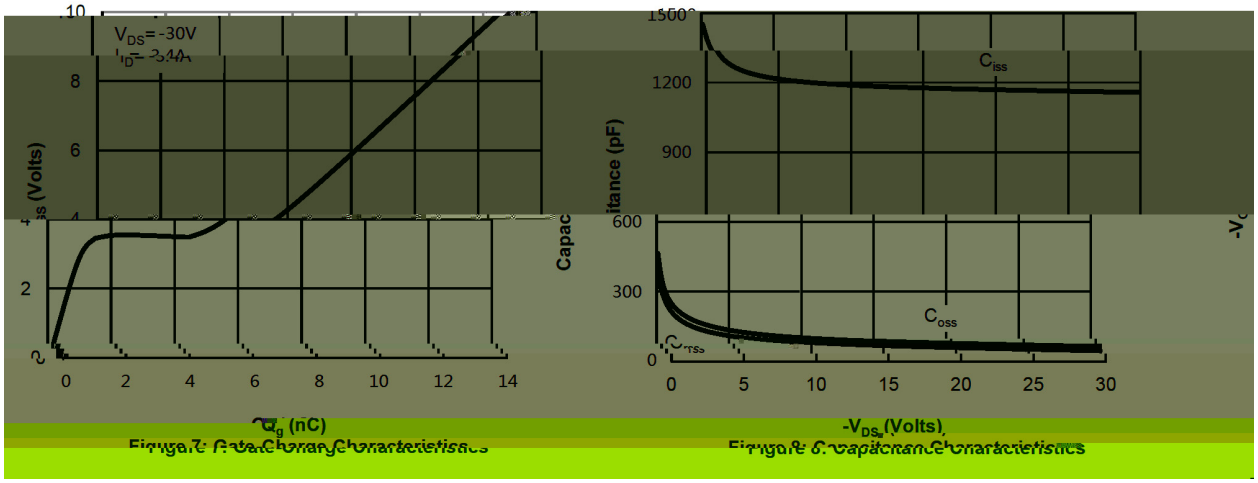
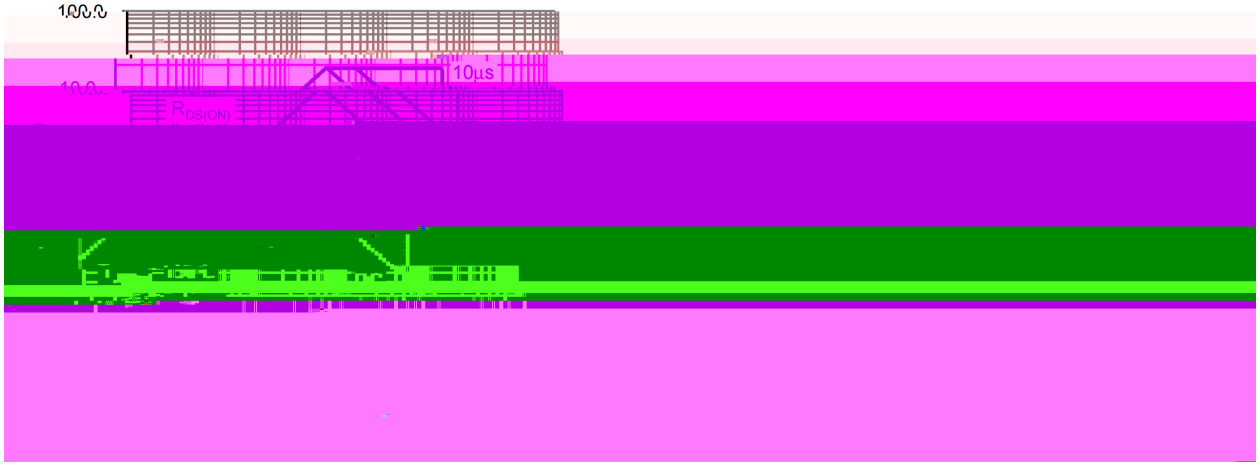


Figure 7: Gate Charge Characteristics

Figure 8: Capacitance Characteristics



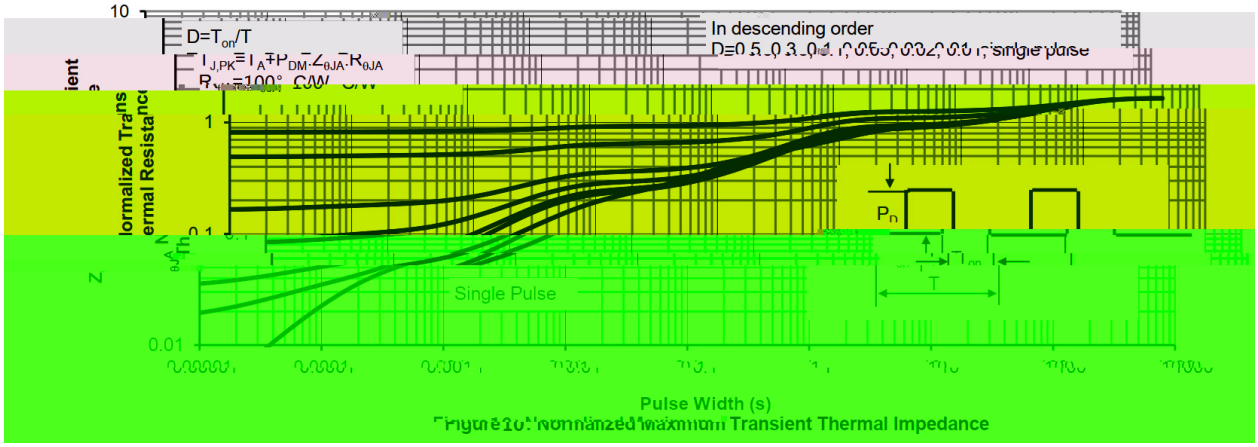
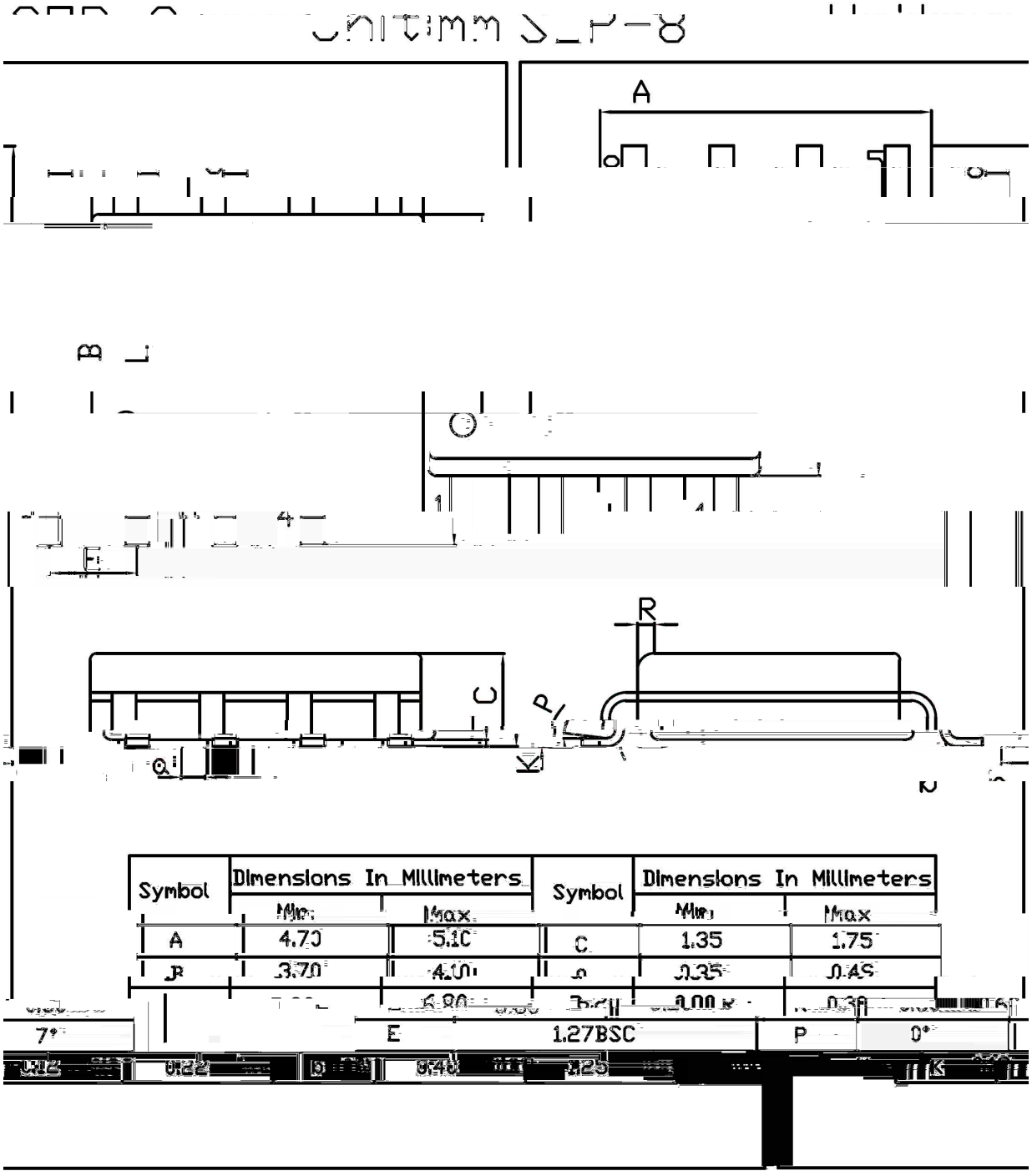


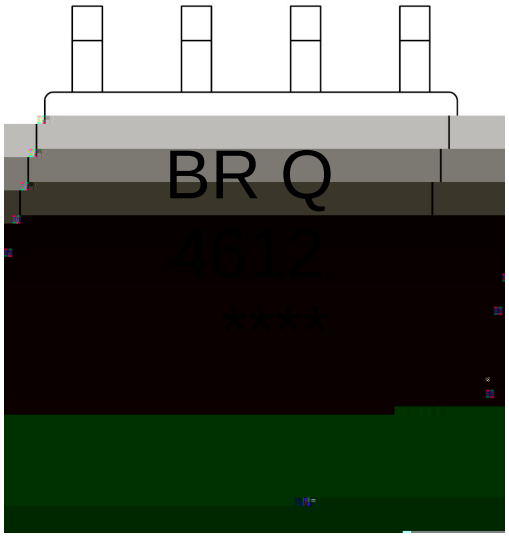
Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min.	Max.		Min.	Max.
A	4.70	5.10	C	1.35	1.75
B	3.70	4.00	b	0.35	0.45
	5.80	6.20		0.00	0.30

/ Marking Instructions



BR

Q

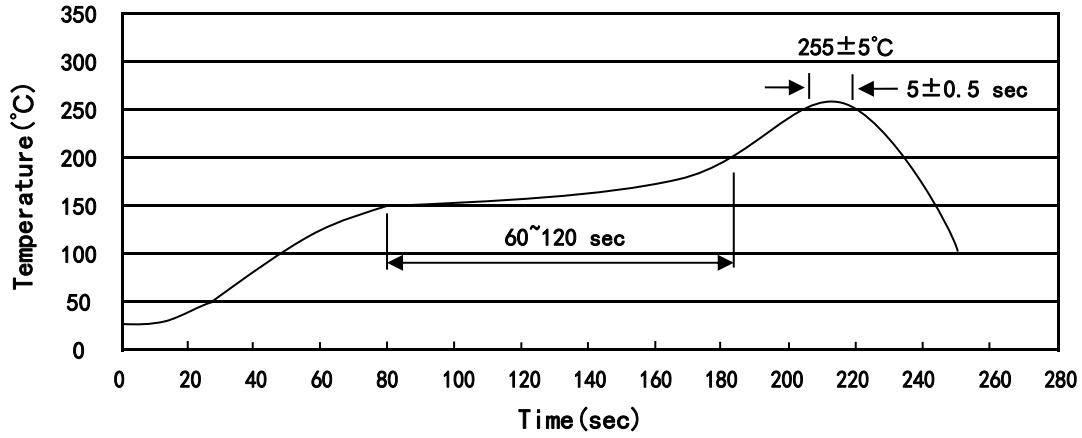
4612

****

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
4612:	Product Type Code
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1	150	200	60	120sec;	1.Preheating:150~200 , Time:60~120sec.
2	255±5			5±0.5sec;	2.Peak Temp.:255±5 , Duration:5±0.5sec.
3		2	10	/sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5℃ Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit：mm³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOP/ESOP-8	4,000	2	8,000	6	48,000	13 ×12	360×360×50	380×335×366

/ Notices