

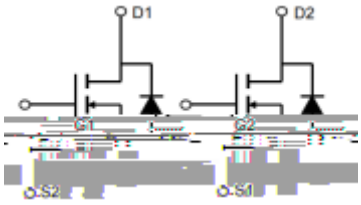
V_{DS}(V)=30V I_D=12.3A

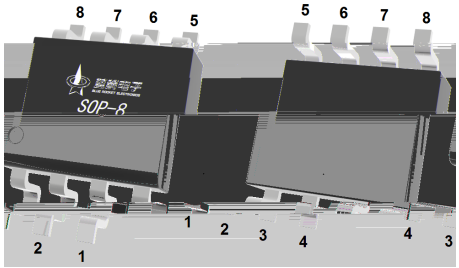
$R_{DS(ON)}$@10V<12mΩ(Typ. 8.7mΩ)

$R_{DS(ON)}$)@4.5V<20mΩ(Typ. 11.5mΩ)

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

, Meet the stringent requirements of automotive applications.





PIN1	S1	PIN 2	G1	PIN 3	S2	PIN 4	G2
PIN 5	D2	PIN 6	D2	PIN 7	D1	PIN 8	D1

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	12.3	A
Pulsed Drain Current	I_{DM}	46.5	A
Power Dissipation	P_D	3	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150	
Maximum Junction-to-Ambient	R_{JA}(Steady-State)	41.7	/W

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Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	30	36.5		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1	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=20A		8.7	12	mΩ
		V_{GS}=4.5V	I_D=10A		11.5	20	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		1200		pF
Output Capacitance	C_{oss}				125		pF
Reverse Transfer Capacitance	C_{rss}				100		pF
Gate resistance	R_g	V_{DS}=0V f=1.0MHz	V_{GS}=0V		3.7		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V I_D=20A	V_{DS}=15V		40		nC
Total Gate Charge	$Q_{g(4.5V)}$				22		nC
Gate-Source Charge	Q_{gs}				11		nC
Gate-Drain Charge	Q_{gd}				5		nC

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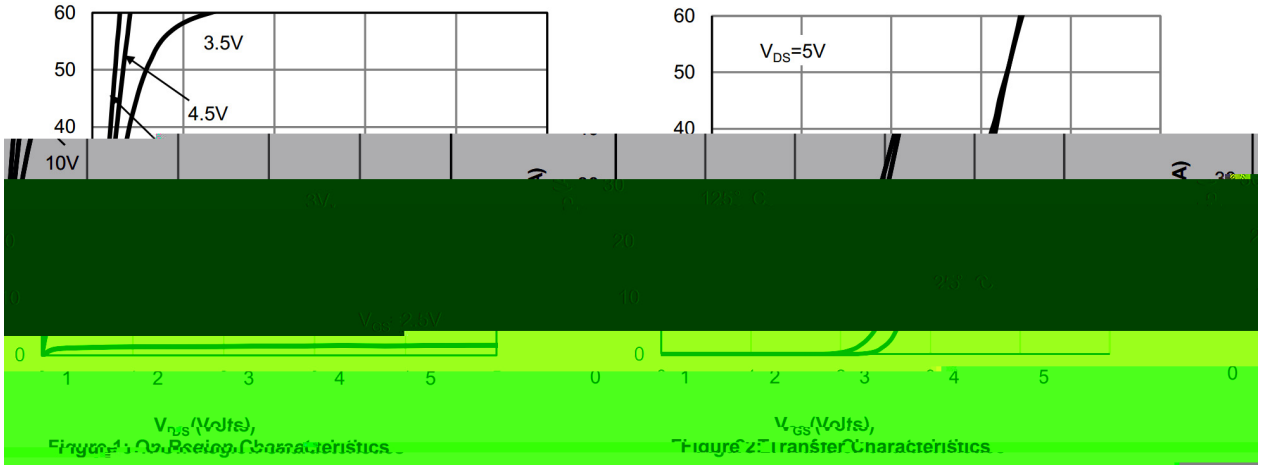
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15 V V_{GS}=10V R_L=0.75Ω R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r			14		ns
Turn-Off Delay Time	$t_{d(off)}$			38		ns
Turn-Off Fall Time	t_f			10		ns



V_{DS}(Volts),

Figure 1: On-Region Characteristics

V_{GS}(Volts),

Figure 2: Transfer Characteristics

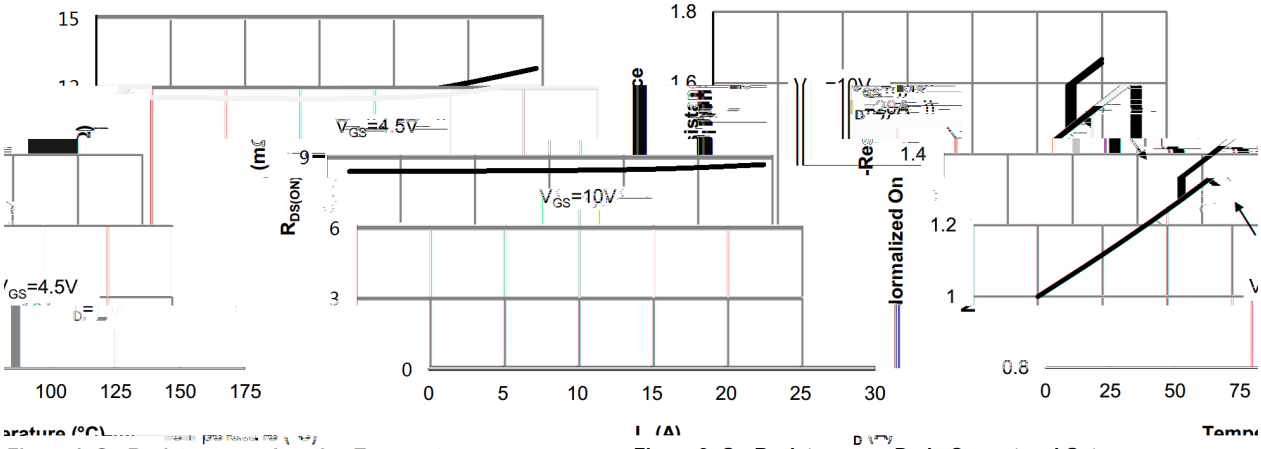
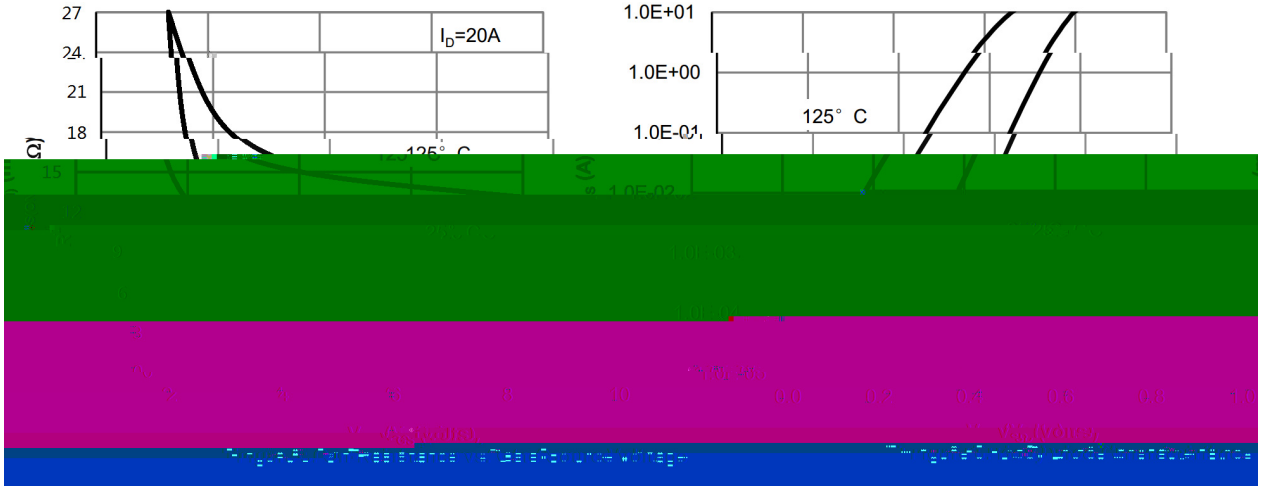


Figure 4: On-Resistance vs. Junction Temperature

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



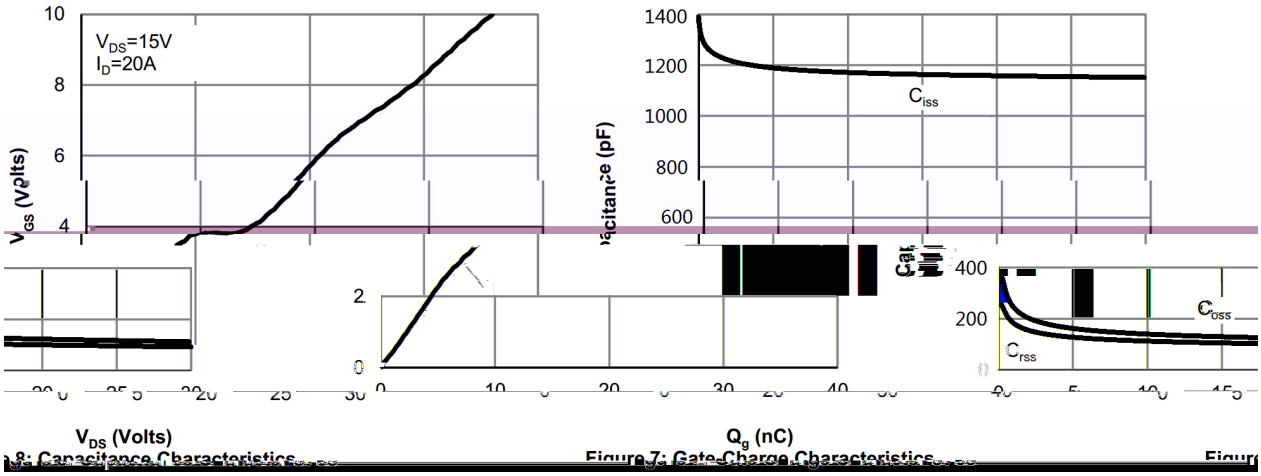


Figure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

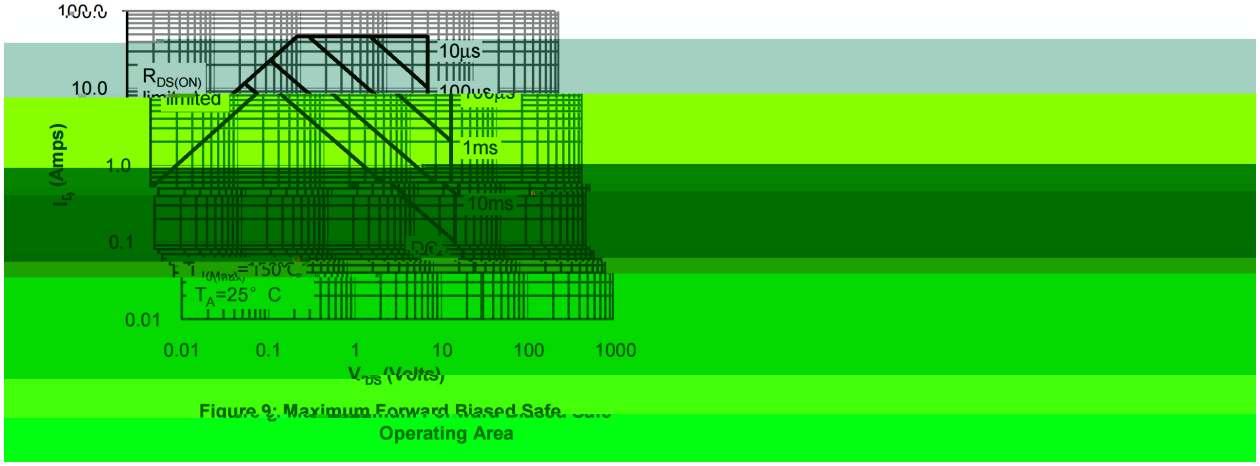


Figure 9: Maximum Forward Biased Safe Operating Area

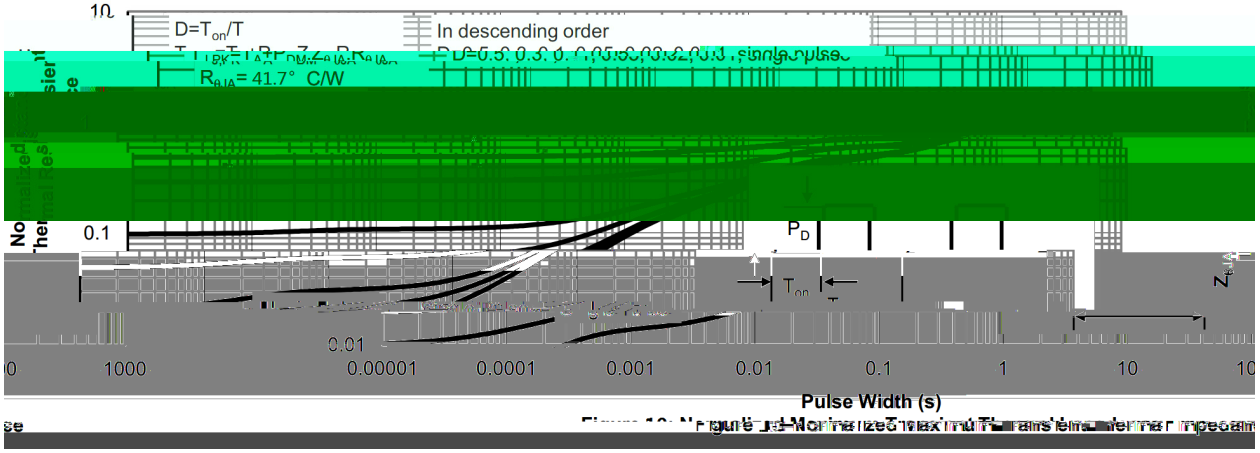
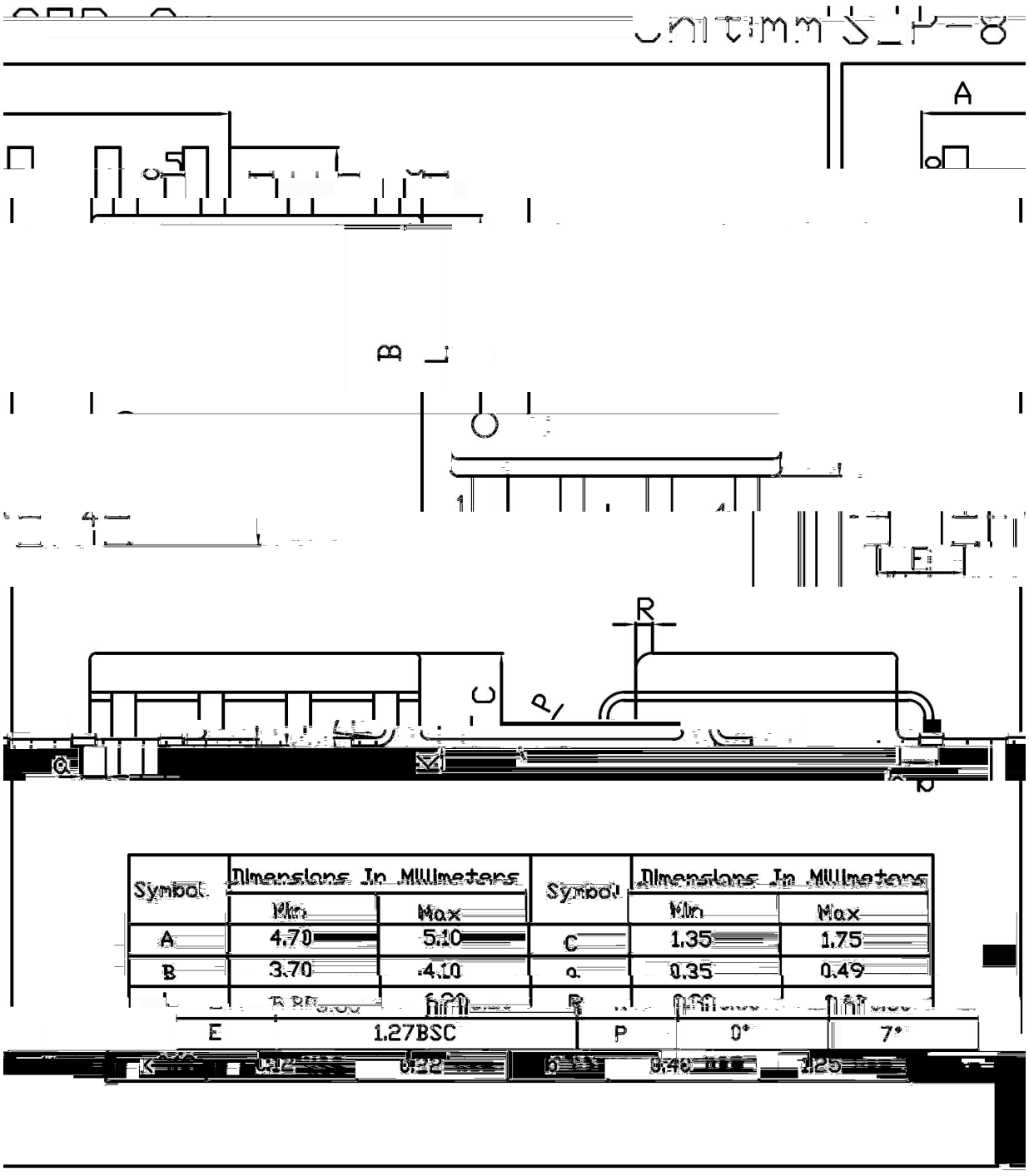
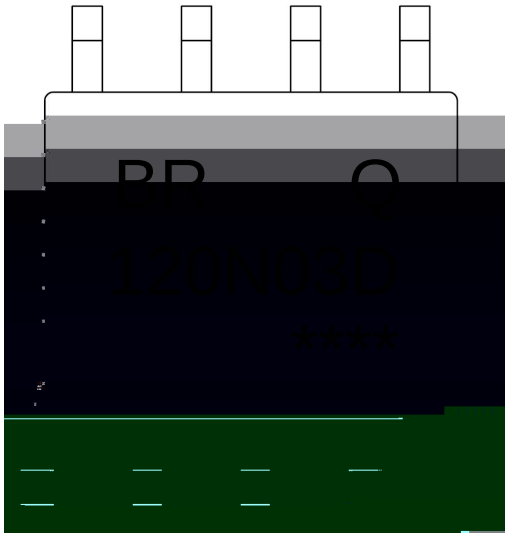


Figure 10: Normalized Maximum Transient Thermal Impedance



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	4.10	α	0.35	0.49
L	[illegible]	[illegible]	R	[illegible]	[illegible]



BR

Q

120N03D

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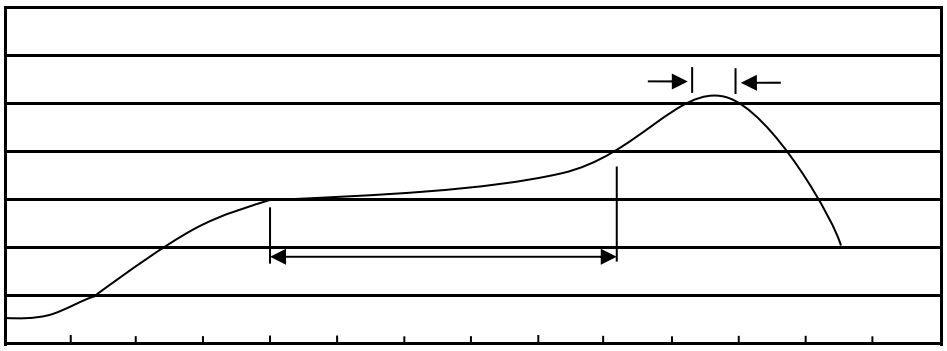
Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
120N03D:	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.

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

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOP/ESOP-8	4,000	2	8,000	6	48,000	13 ×12	360×360×50	380×335×366