

BRCS150P04DSC

Rev.A Aug.-2024

/ Descriptions

SOP-8 P MOS

Double P-CHANNEL MOSFET in a SOP-8 Plastic Package.

/ Features

$V_{DS}=-40V$; $I_D=-10A$

$R_{DS(on)1}@-10V$ 15m (Type.13m)

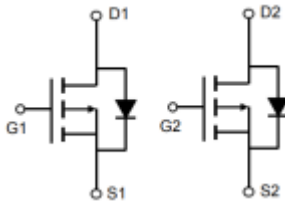
$R_{DS(on)2}@-4.5V$ 30m (Type.17m)

HF Product.

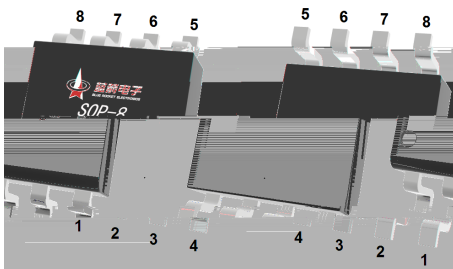
/ Applications

Power Management in Computer, Portable Equipment and Battery Powered Systems, Load Switches, Motor Control.

/ Equivalent Circuit



/ Pinning



PIN1 S1 PIN 2 G1 PIN 3 S2 PIN 4 G2

PIN 5 D2 PIN 6 D2 PIN 7 D1 PIN 8 D1

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain–Source Voltage	V _{DS}	-40	V
Gate–Body Leakage Voltage	V _{GS}	±20	V
Drain Current – Continuous	I _D	-10	A
Pulsed Drain Current	I _{DM}	-41	A
Power Dissipation	P _D	2.5	W
Operating and Storage Temperature Range	T _J ,T _{STG}	-55 150	
Maximum Junction-to-Ambient	R _{JA}	50	/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250μA	-40	-46.5		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V V _{GS} =0V			1.0	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±0.1	μA
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		13	15	mΩ
		V _{GS} =-4.5V I _D =-7A		17	30	
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =-1A			-1.2	V
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V, f=1MHz		6.5		Ω
Input Capacitance	C _{iss}	V _{DS} =-25V V _{GS} =0V f=1.0MHz		2680		pF
Output Capacitance	C _{oss}			1150		
Reverse Transfer Capacitance	C _{rss}			870		
Total Gate Charge	Q _g (10V)	V _{GS} =-10V V _{DS} =-20V I _D =-10A		42		nC
Total Gate Charge	Q _g (4.5V)			18.6		
Gate Source Charge	Q _{gs}			7		
Gate Drain Charge	Q _{gd}			8.6		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-20V$ $R_L=1$ $R_{GEN}=3\Omega$		9.4		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			55		
Turn-Off Fall Time	t_f			30		

/ Electrical Characteristic Curve

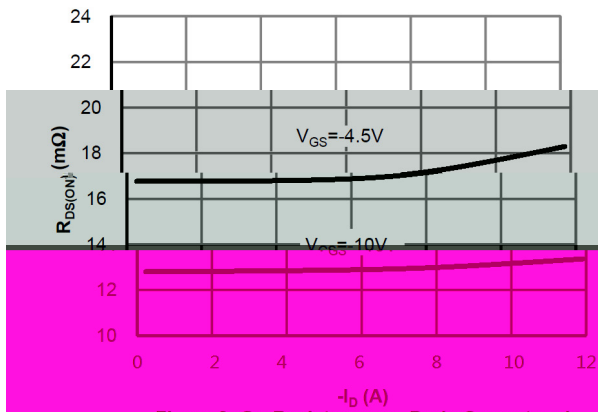
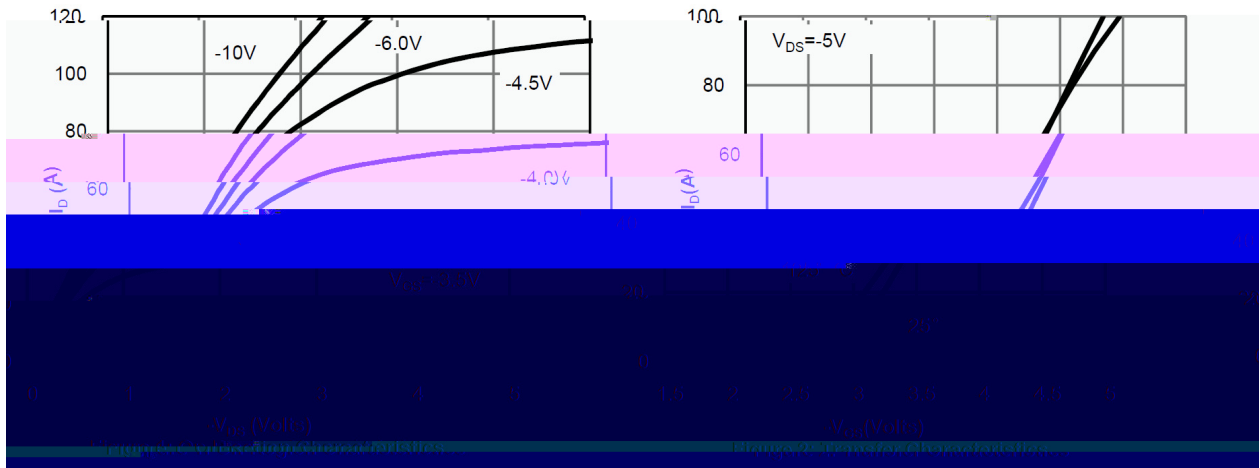


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

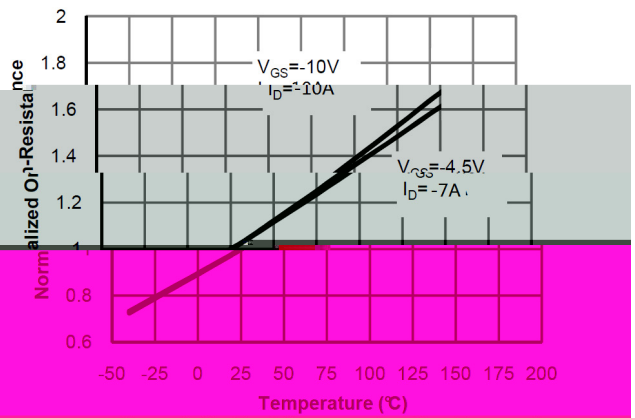


Figure 4: On-Resistance vs. Junction Temperature

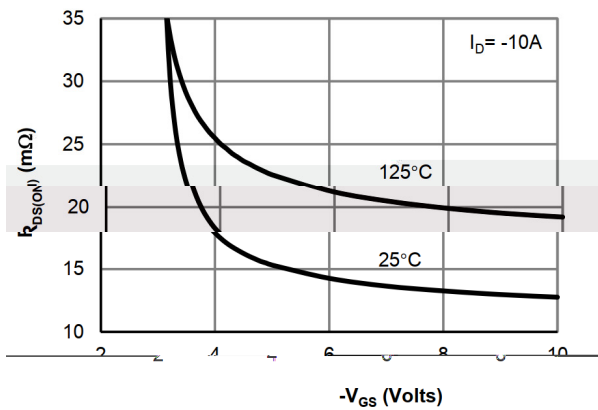


Figure 5: On-Resistance vs. Gate-Source Voltage

Characteristics

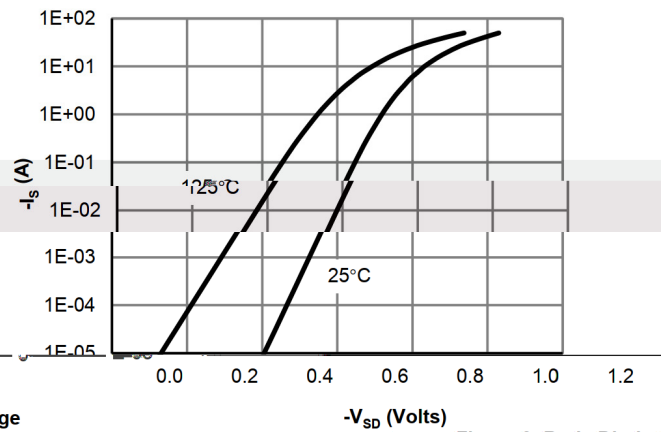


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

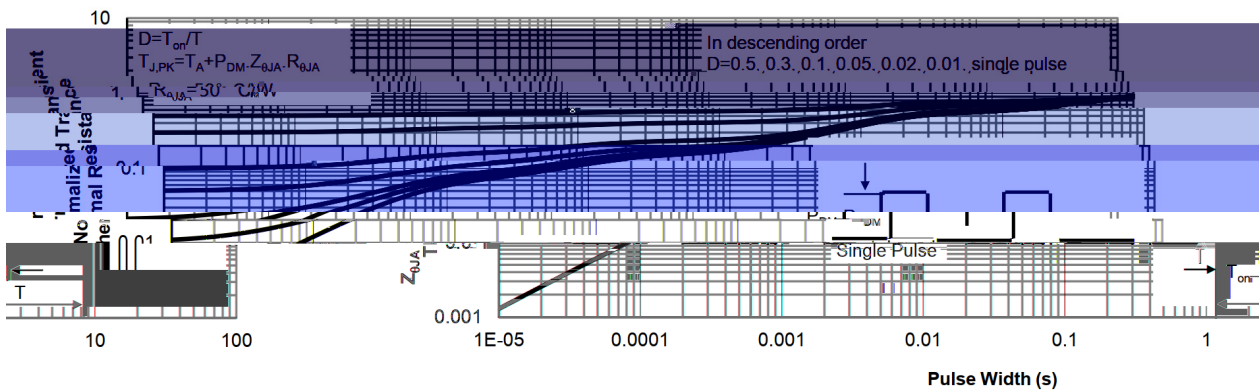
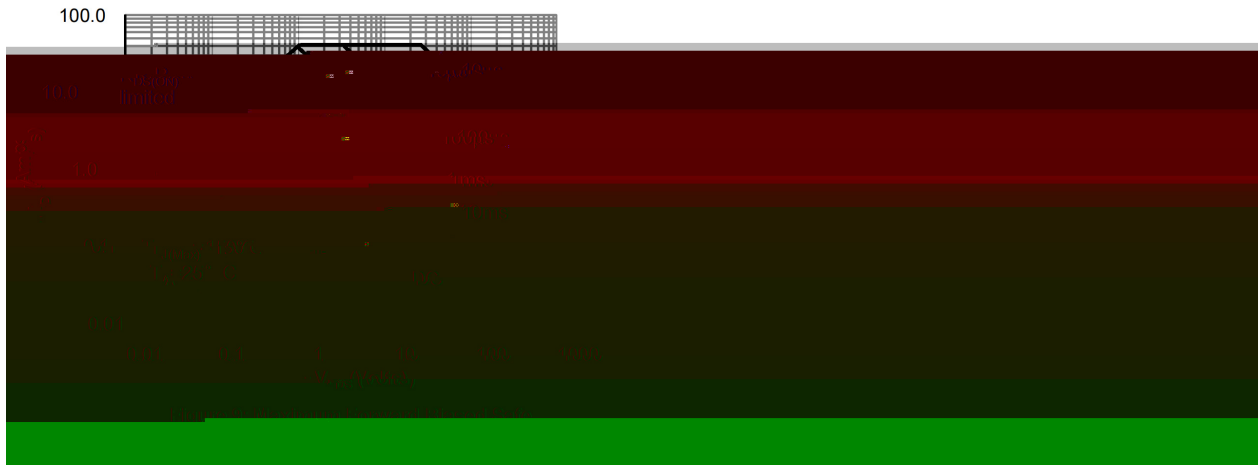
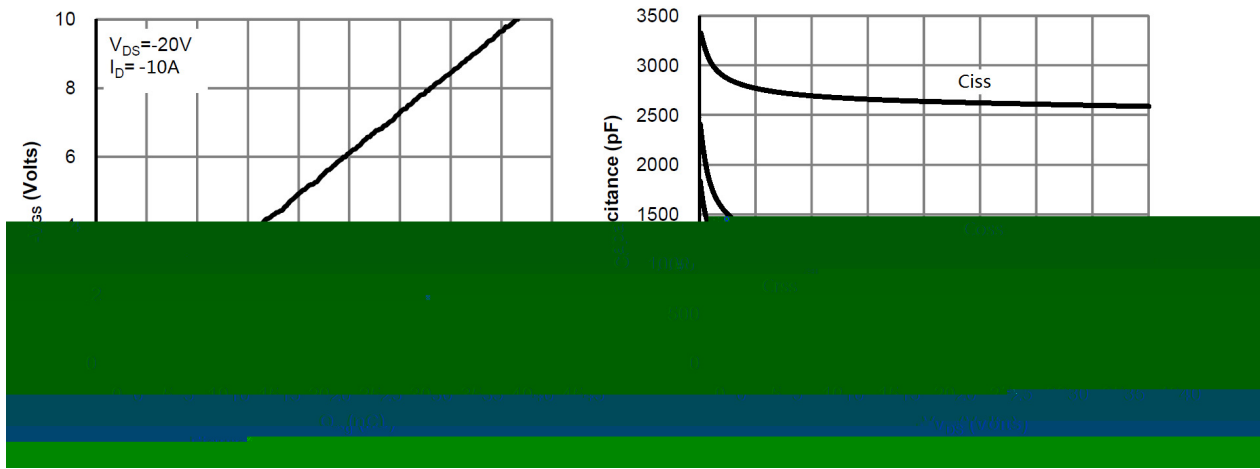
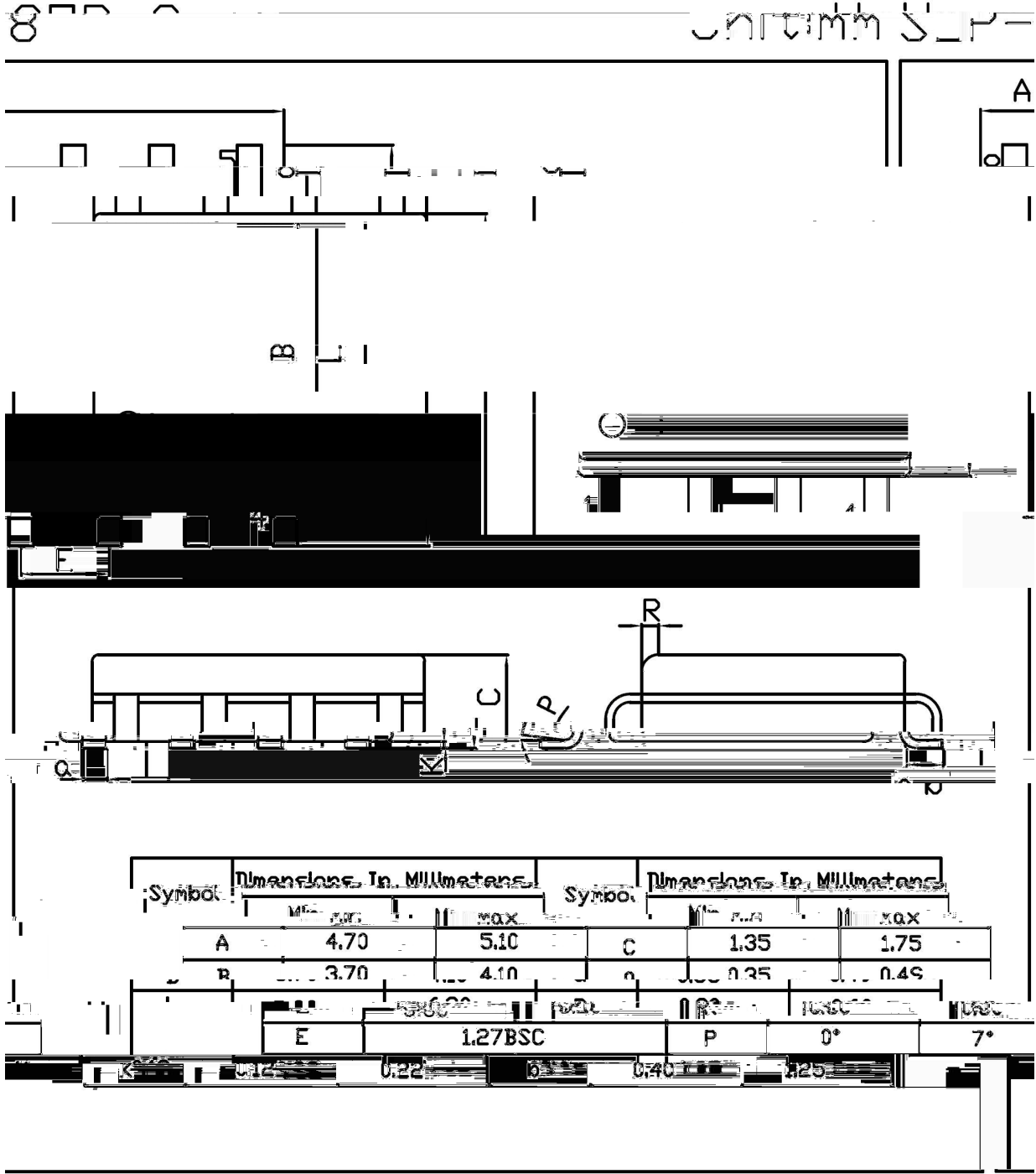
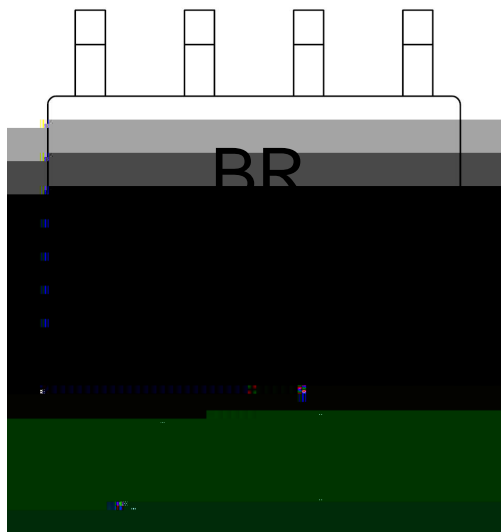


Figure10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



/ Marking Instructions



BR

150P04D

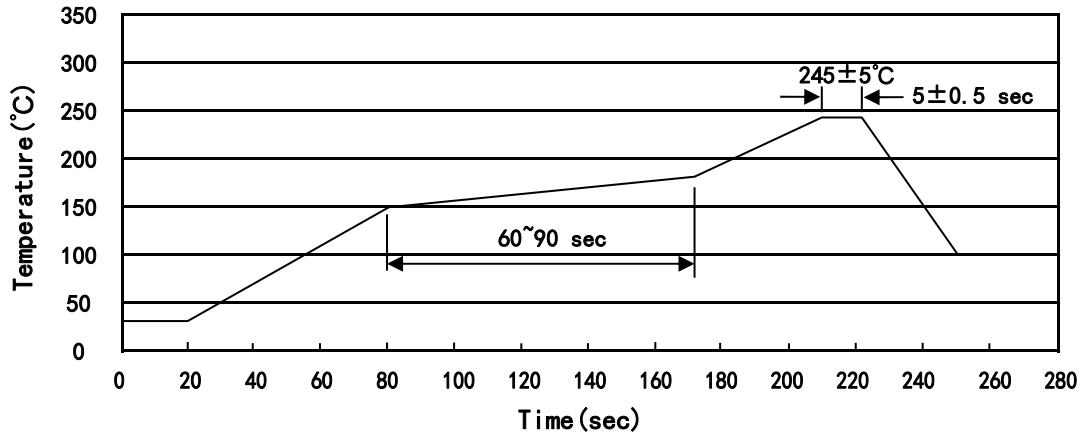
Note:

BR: Company Code

150P04D: Product Type Code

****: Lot No. Code, code change with Lot No

() /



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±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	Units					Dimension (unit mm ³)		
	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

/ Notices