

/ Descriptions

SOT23-3 P MOS

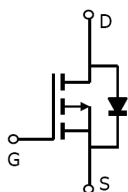
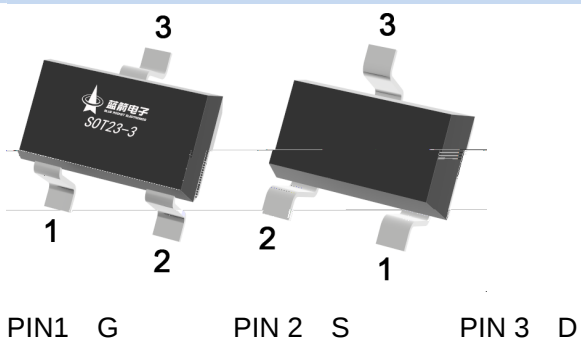
P- CHANNEL MOSFET in a SOT23-3 Plastic Package.

/ Features $V_{DS} (V) = -16V$ $I_D = -5A$ $R_{DS(ON)}@-4.5V \leq 32m\Omega$ (Type.27m Ω) $R_{DS(ON)}@-2.5V \leq 42m\Omega$ (Type.37.3m Ω) $R_{DS(ON)}@-1.8V \leq 60m\Omega$ (Type.51m Ω)

HF Product.

/ Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

/ Equivalent Circuit**/ Pinning****/ Marking**

See Marking Instructions.

BRCS300P016MC

Rev.A Nov.-2023



DATA SHEET

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-16	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-5	A
Pulsed Drain Current	I_{DM}	-23	A
Avalanche Current	I_{AS}	21	A
Avalanche energy $L=0.5mH$	E_{AS}	308	mJ

/ Electrical Characteristics(Tc=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A$ $V_{GS}=0V$	-16	-18		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-16V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 8V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V$ $I_D=-2.0A$		27	32	m Ω
		$V_{GS}=-2.5V$ $I_D=-2.0A$		37.3	42	
		$V_{GS}=-1.8V$ $I_D=-2.0A$		51	60	
Diode Forward Voltage	V_{SD}	$I_S=-1A$ $V_{GS}=0V$		0.75		V
Total Gate Charge	Q_g	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-8A$		16		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			3.5		
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=-25V$ $f=1MHz$		740		pF
Output Capacitance	C_{oss}			290		
Reverse Transfer Capacitance	C_{rss}			190		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $R_L=1.25\Omega$ $R_{GEN}=3\Omega$		7.2		ns
Turn-on Rise Time	t_r			29		
Turn-off Delay Time	$t_{d(OFF)}$			100		
Turn-off Fall Time	t_f			50		

/ Electrical Characteristic Curve

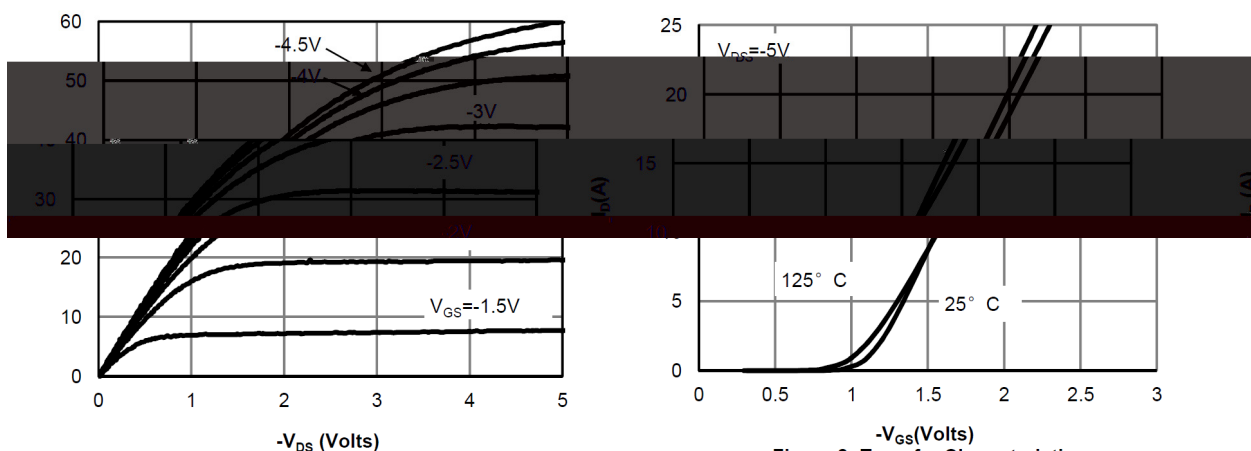


Fig 1: On-Region Characteristics

Figure 2: Transfer Characteristics

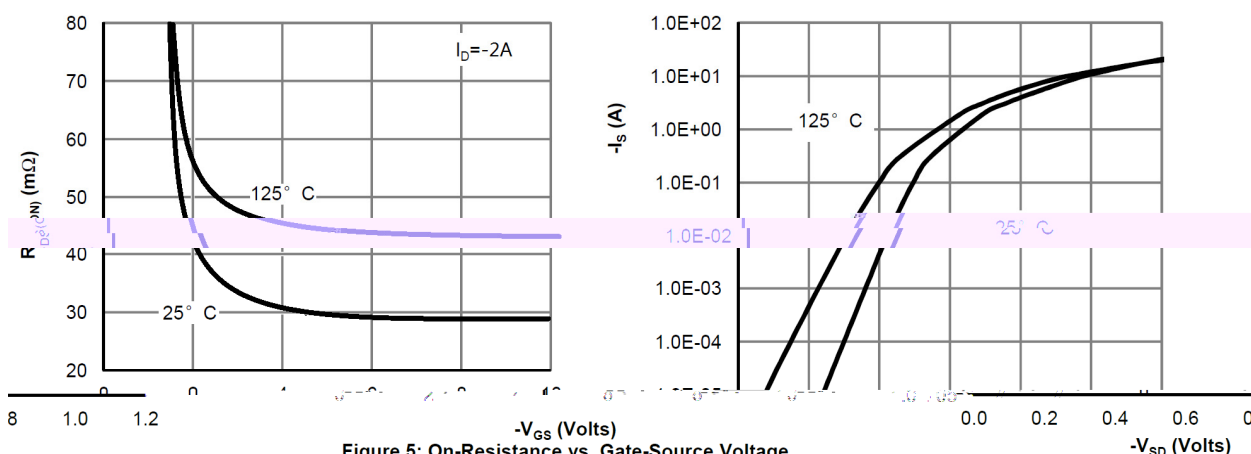
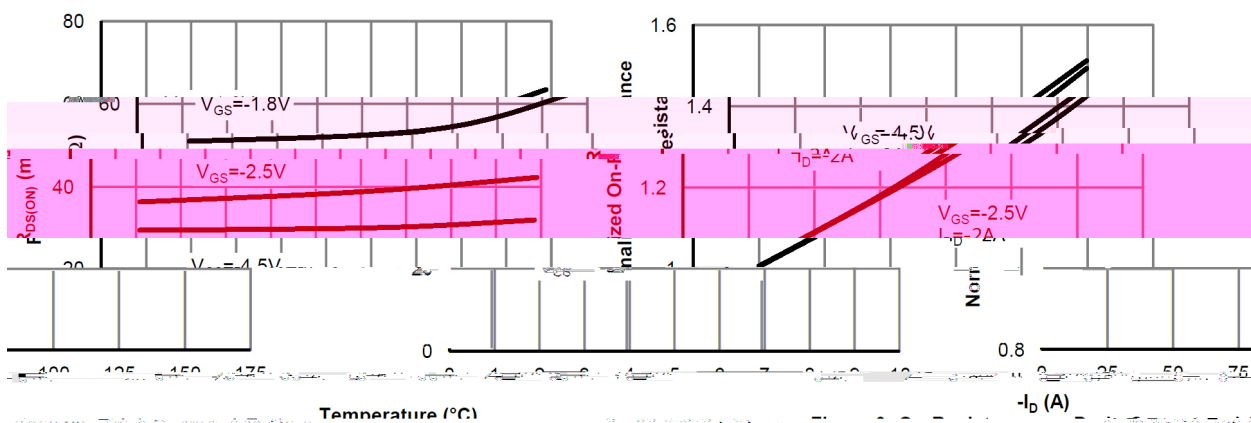


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

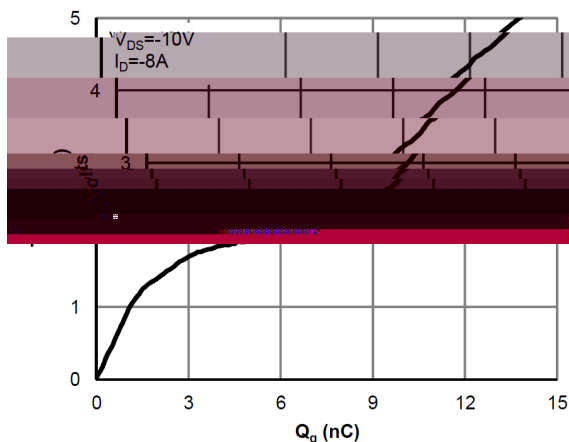


Figure 7: Gate-Charge Characteristics

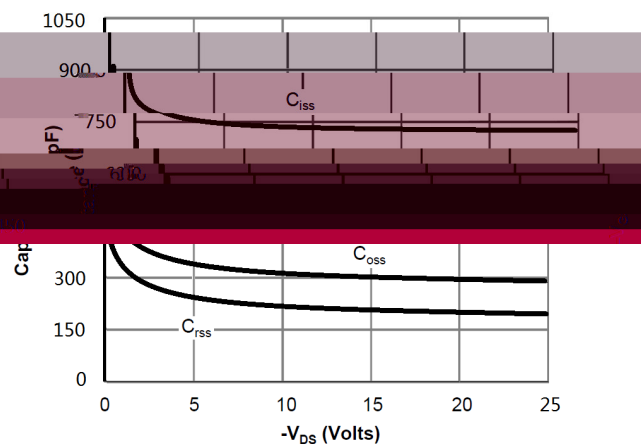


Figure 8: Capacitance Characteristics

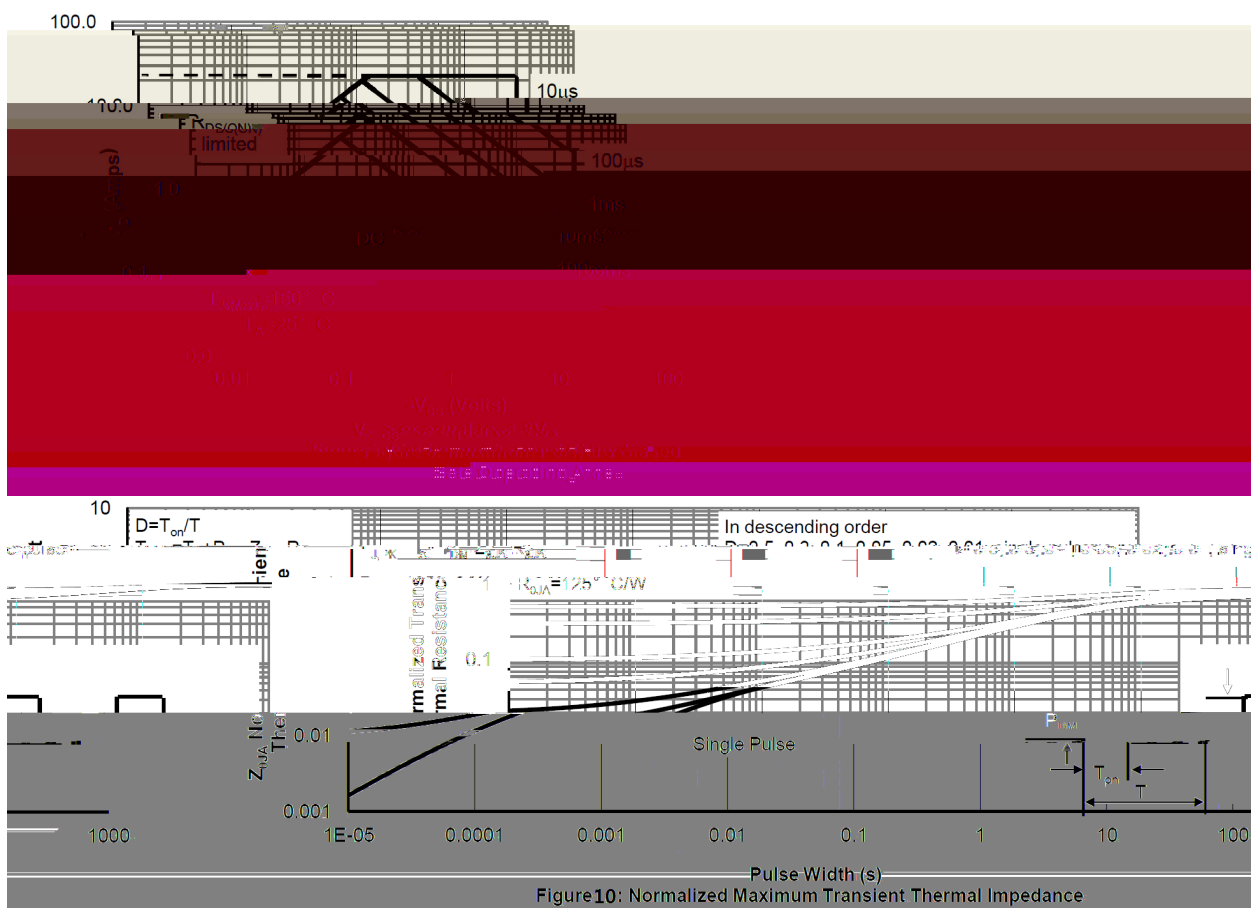
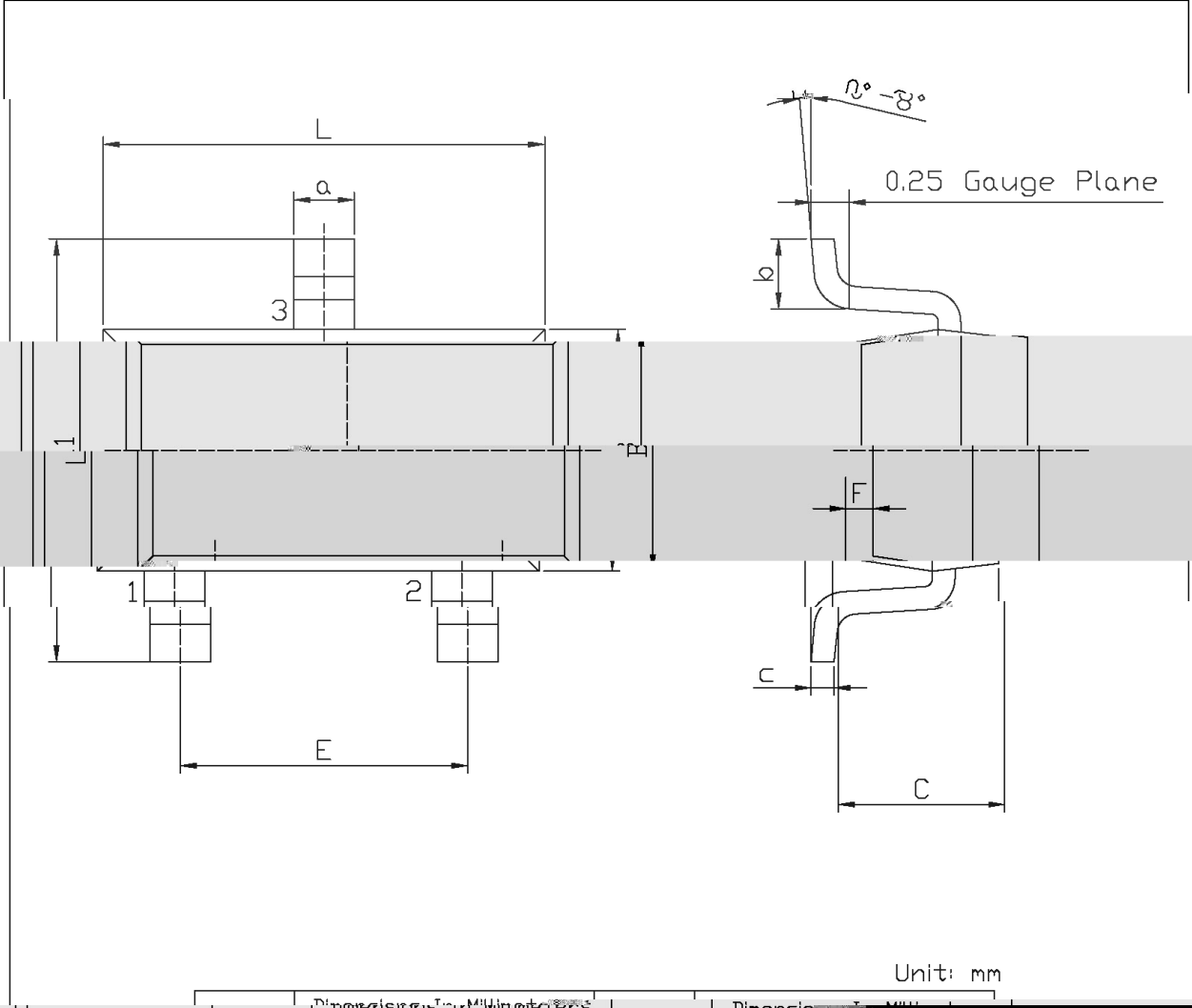


Figure 10: Normalized Maximum Transient Thermal Impedance

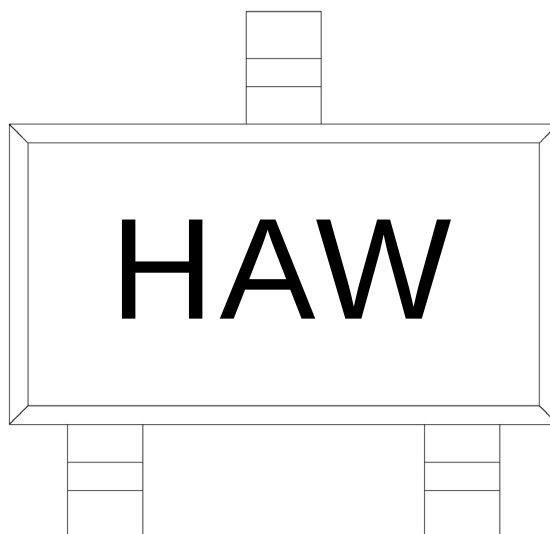
/ Package Dimensions



Unit: mm			
Dimension	Symbol	Dimension	Symbol
2.02	a	2.02	a
0.25	0.25 Gauge Plane	0.25	0.25 Gauge Plane
0.50	0.50	0.50	0.50



/ Marking Instructions



H:

AW:

Note:

H: Company Code

AW Product Type Code

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



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
SOT23-3	3,000	10	30,000	4	120,000	7 ×8	210×205×205	445×435×230

/ Notices