

SOP-8 P Power Trench MOS

P-Channel Power Trench MOSFET in a SOP-8 Plastic Package.

$R_{DS\ ON}$

Low gate charge, Fast switching speed, High performance trench technology for extremely, low $R_{DS(ON)}$, High power and current handling capability. Halogen-free Product.

Power management, Load switch, Battery protection.

PIN1 PIN2 PIN3 S PIN4 G

PIN5 PIN6 PIN7 PIN8 D



/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current –Continuous (note 1a) –Pulsed	I_{D}	-5.3	A
		-50	A
Power Dissipation for Single Operation (note 1a) (note 1b) (note 1c)	P_{D}	2.5	W
		1.2	
		1.0	
Thermal Resistance, Junction-to-Ambient (note 1a)	$R_{\theta\text{JA}}$	50	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient (note 1c)	$R_{\theta\text{JA}}$	125	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to case (note 1)	$R_{\theta\text{JC}}$	25	$^\circ\text{C}/\text{W}$
Operating and Junction Temperature Range	T_{j} T_{stg}	-55~175	$^\circ\text{C}$

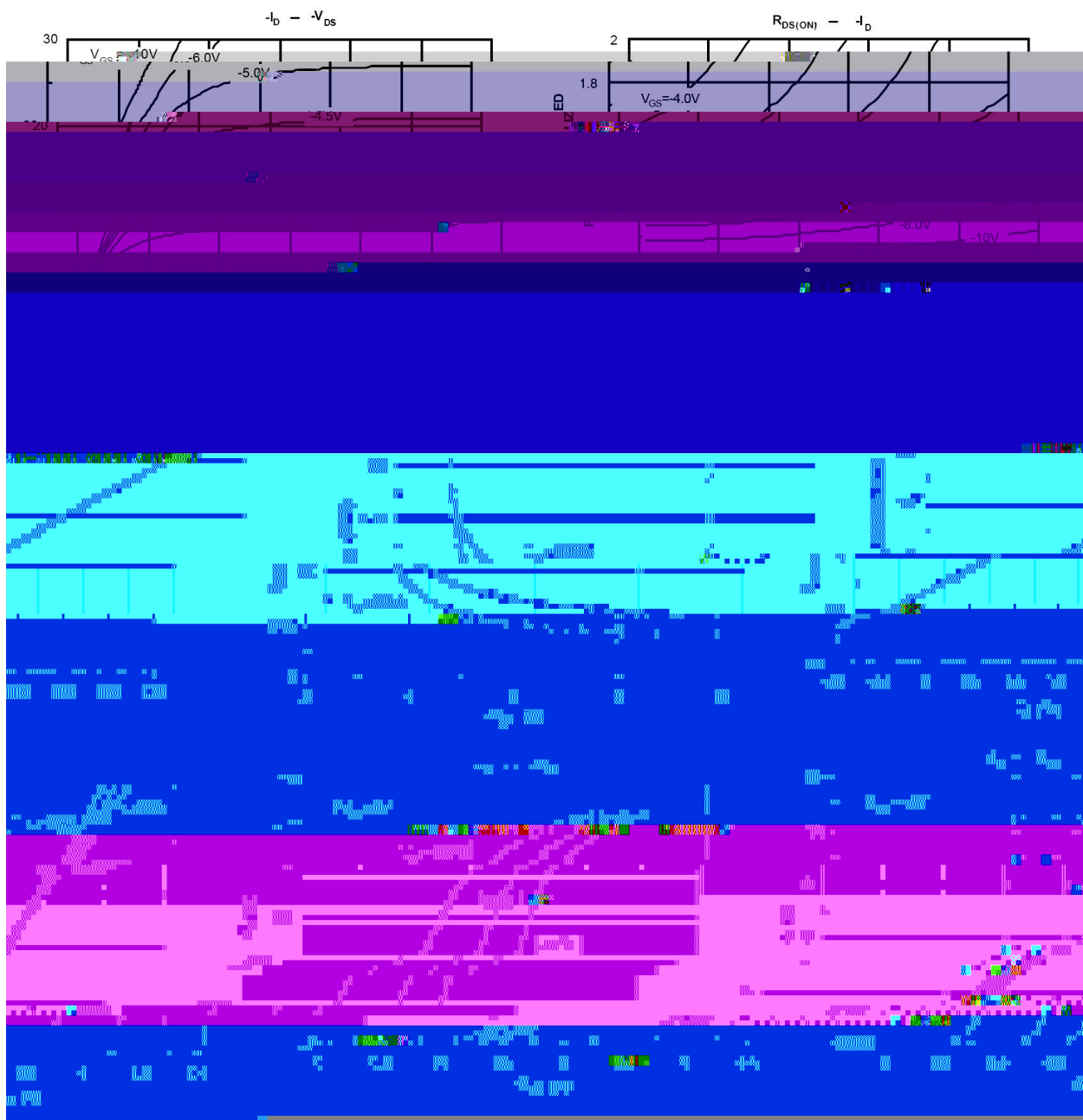
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$V_{\text{GS}}=0\text{V}$ $I_{\text{D}}=-250\mu\text{A}$	-30			V
Breakdown Voltage Temperature Coefficient	$\Delta B_{V_{\text{DSS}}}/\Delta T_{\text{J}}$	$I_{\text{D}}=-250\mu\text{A}$ Referenced to 25°C		-23		$\text{mV}/^\circ\text{C}$
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=-24\text{V}$ $V_{\text{GS}}=0\text{V}$			-1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{\text{GS}}=\pm 20\text{V}$ $V_{\text{DS}}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}}=V_{\text{GS}}$ $I_{\text{D}}=-250\mu\text{A}$	-1.0	-1.7	-3.0	V
Gate Threshold Voltage Temperature Coefficient	$\Delta V_{\text{GS(th)}}/\Delta T_{\text{J}}$	$I_{\text{D}}=-250\mu\text{A}$ Referenced to 25°C		4.5		$\text{mV}/^\circ\text{C}$
Static Drain-Source On-Resistance	$R_{\text{DS(on)}}$	$V_{\text{GS}}=-10\text{V}$ $I_{\text{D}}=-5.3\text{A}$		42	50	m Ω
		$V_{\text{GS}}=-4.5\text{V}$ $I_{\text{D}}=-4\text{A}$		65	80	
		$V_{\text{GS}}=-10\text{V}$ $I_{\text{D}}=-5.3\text{A}$ $T_{\text{J}}=125^\circ\text{C}$		57	77	
On-State Drain Current	$I_{\text{D(on)}}$	$V_{\text{GS}}=-10\text{V}$ $V_{\text{DS}}=-5\text{V}$	-25			A
Forward Transconductance	g_{FS}	$V_{\text{DS}}=-5\text{V}$ $I_{\text{D}}=-5.3\text{A}$		10		S

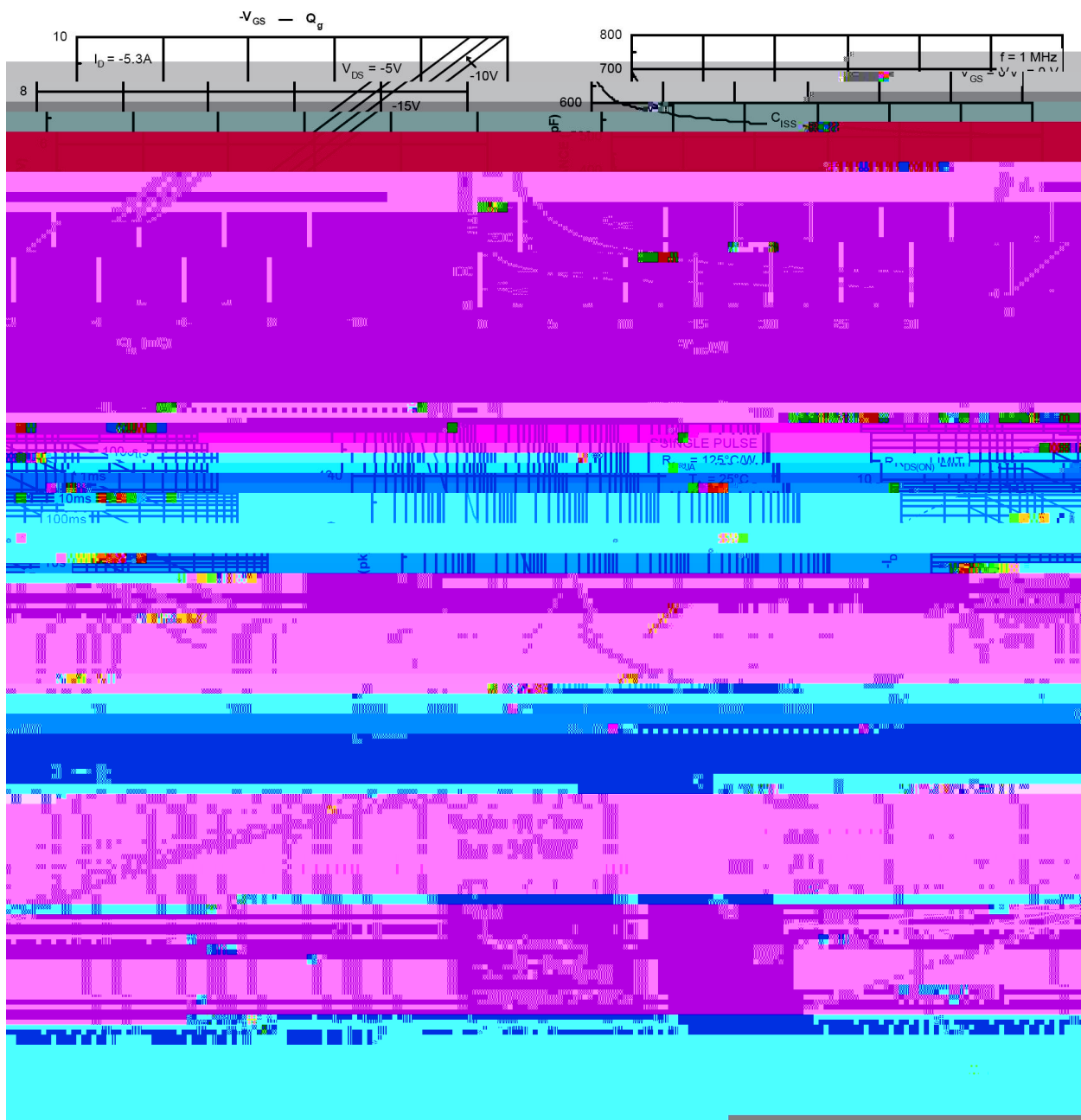
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C _{iss}	V _{DS} =-15V V _{GS} =0V f =1.0MHz		528		pF
Output Capacitance	C _{oss}			132		

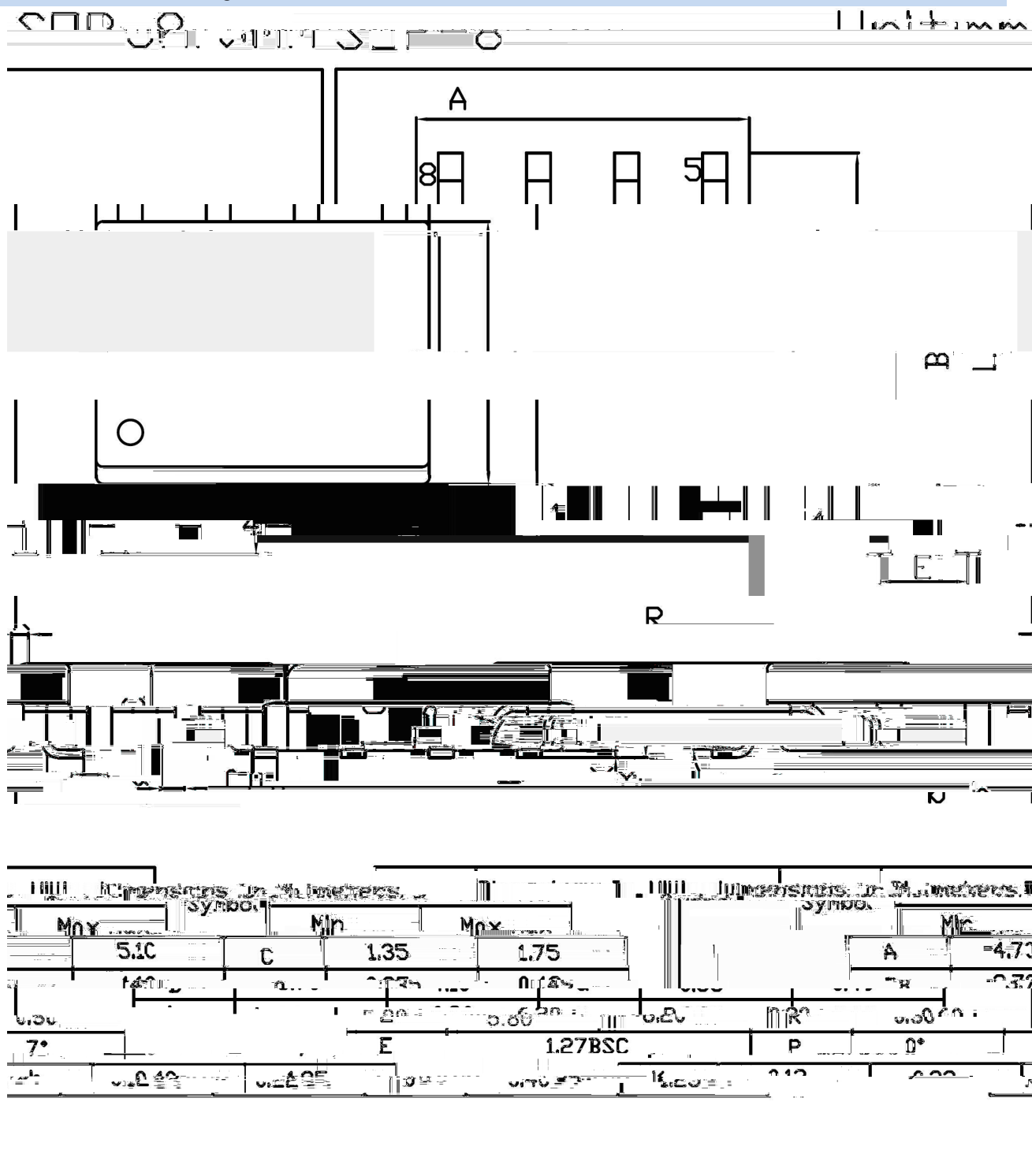
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



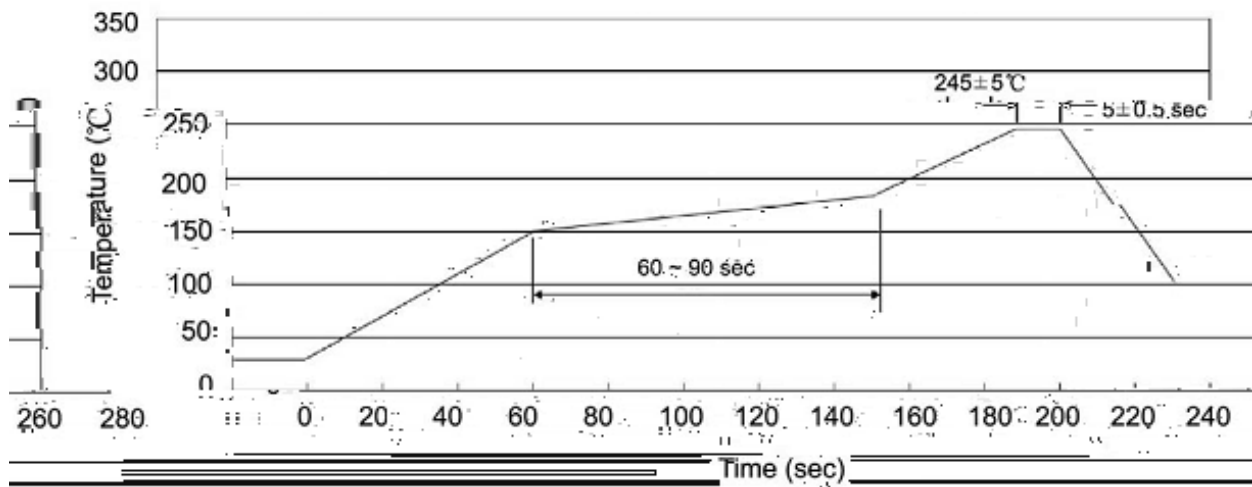
/ Package Dimensions



/ Marking Instructions

BR7S ϕ

() / 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°C 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