



Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current(DC)	$I_D(T_C=25^\circ\text{C})$	400	A
	$I_D(T_C=100^\circ\text{C})$	215	A
Drain Current – Pulsed	I_{DM}	1200	A
Power Dissipation	P_{tot}	250	W
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 175	$^\circ\text{C}$
Continuous-Source Current	I_S	400	A
Single Pulse Avalanche Energy ($V_{DD}=50\text{V}$, $L=1.0\text{mH}$)	E_{AS}	2592	mJ
Thermal resistance, junction - Ambient	$R_{\theta JA}$	46	$^\circ\text{C/W}$
Thermal resistance, junction - case	$R_{\theta JC}$	0.6	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	2		4	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$			± 100	nA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=50\text{A}$		1.1	1.3	m Ω
		$V_{GS}=6\text{V}$, $I_D=30\text{A}$		1.5	2.0	m Ω
Diode Forward Voltage	V_{SD}	$I_S=50\text{A}$, $V_{GS}=0\text{V}$			1.3	V
Reverse Recovery Time	t_{rr}	$I_F=50\text{A}$, $V_{GS}=0\text{V}$		140		ns
Reverse Recovery Charge	Q_{rr}	$dI_{SD}/dt=100\text{A}/\mu\text{s}$		403		nC
Input Capacitance	C_{iss}	$V_{DS}=50\text{V}$, $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		12881		pF
Output Capacitance	C_{oss}			2122		
Reverse Transfer Capacitance	C_{rss}			162		
Total Gate Charge	Q_g	$V_{GS}=10\text{V}$, $V_{DS}=50\text{V}$ $I_{DS}=50\text{A}$		196		nC
Gate Source Charge	Q_{gs}			68		
Gate Drain Charge	Q_{gd}			35		

Tur.54 .48 ref55.2 ref388.74 210.32 .479922 refBTWTj15.62 IP4 7u 552oGS(th)r04TJ7.0172 0 0 703 Tmd(on0 Tc()T

BRCS013N10SHTL

/ Electrical Characteristic Curve

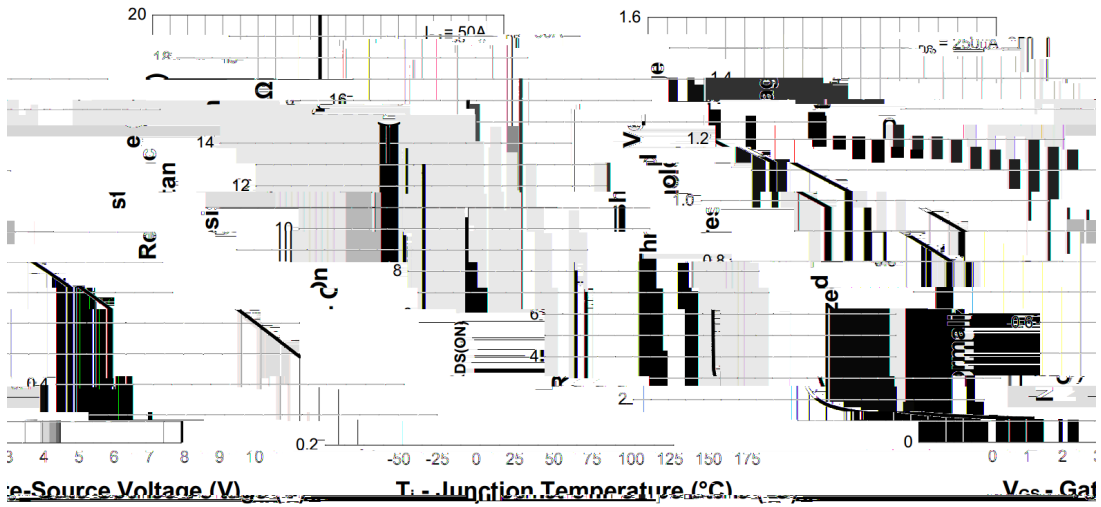


Fig7. Transfer Characteristics

Fig8. Normalized Threshold Voltage

Fig9. Normalized On Resistance

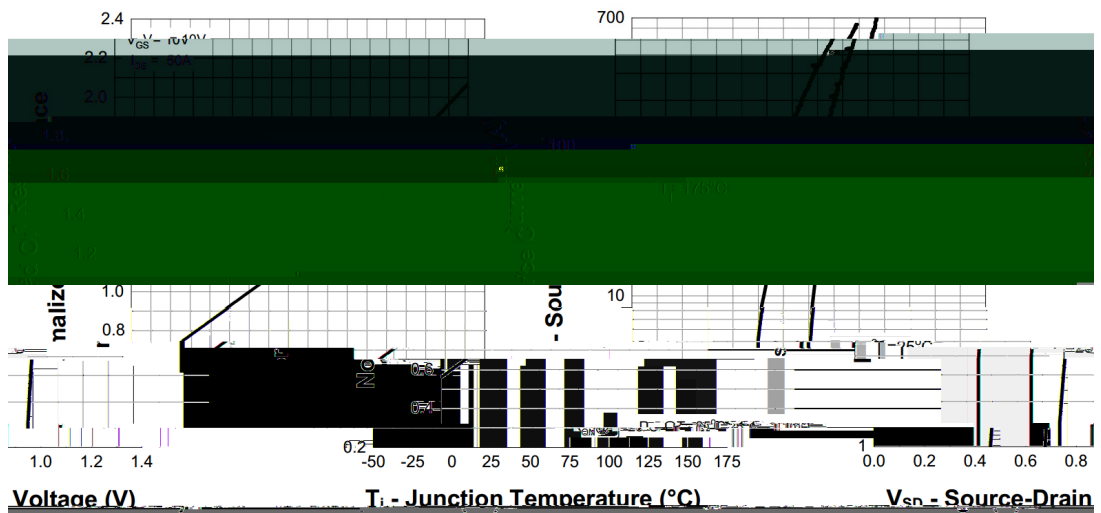


Fig9. Normalized On Resistance

Fig10. Diode Forward Current

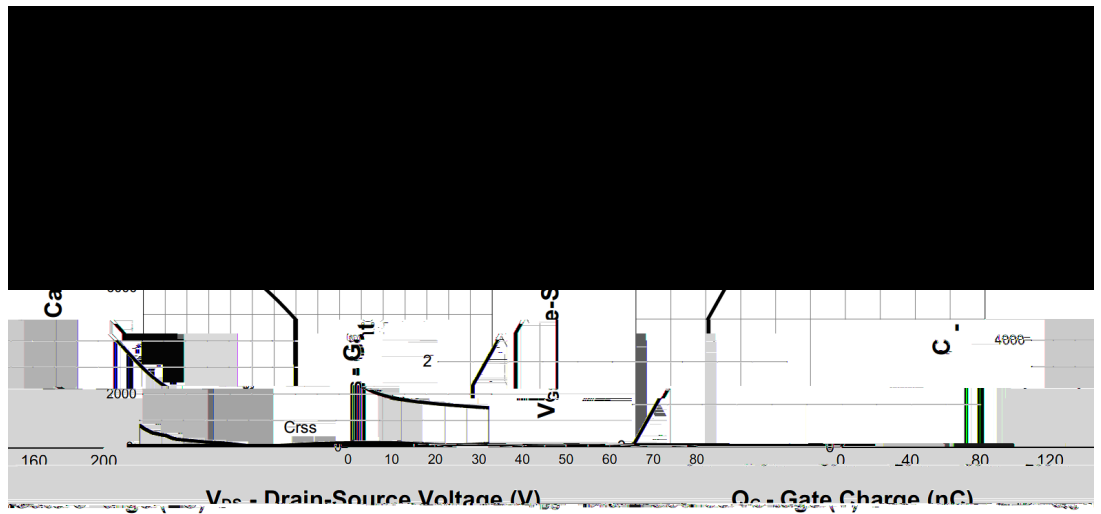
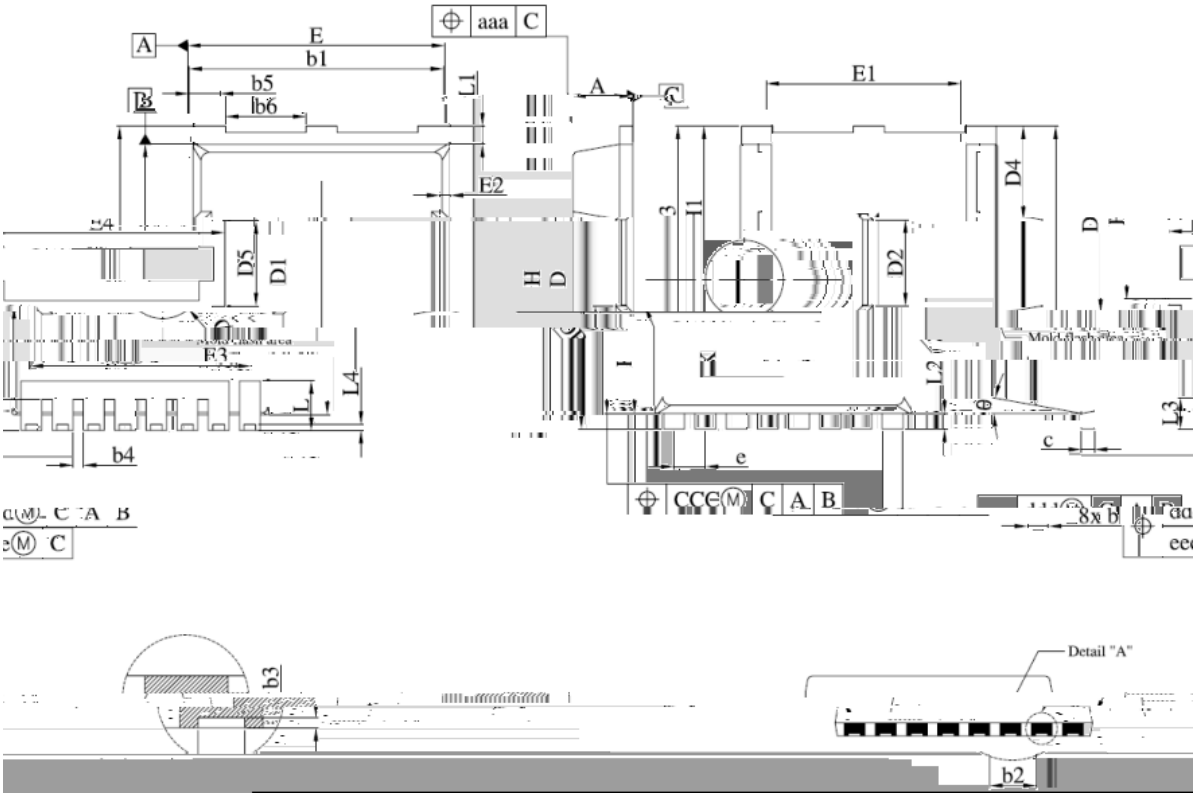
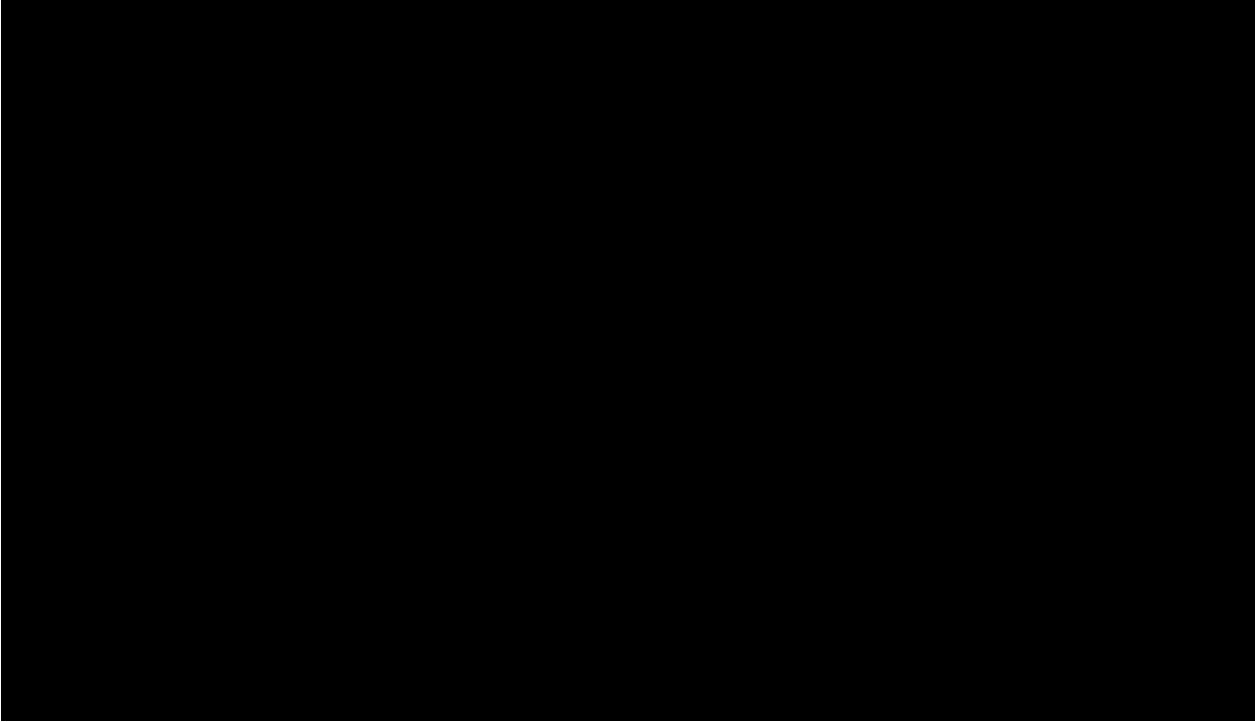


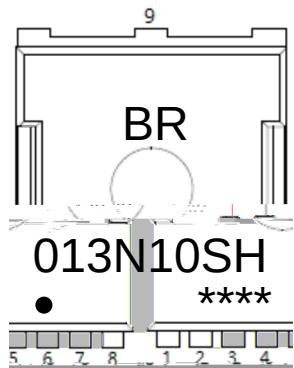
Fig12. Diode Reverse Current

Fig13. Diode Reverse Current

/ Package Dimensions



/ Marking Instructions



- ٠ " χ

EU χ
 ٨ ٣ " Γ

 013N10SH χ
 ٨ ٣ " Γ
 ---- χ
 ٨ ١ ٢ ٣ " Γ ١ ٤ ١ ٢ ٣ " Ψ ρ
- Note χ

BR χ
 Company Code
 013N10SH χ
 Product Type Code
 ****.
 Lot No. Code, code change with Lot No.


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

ب " Χ

1 ǀ ǂ □ ŷ 150 º 180 † ǀ `H ǂ 60 º 90sec;

2 Š Œ □ ŷ 245 ° 5 † ǀ `H ǂ `Y ǂ 5 ° 0.5sec;

3 ǀ ` ǂ , ǂ ǂ ŷ 2 º 10 † /sec.

Note:

1.Preheating:150~180 † , Time:60~90sec.

2.Peak Temp.:245 ° 5 † , Duration:5 ° 0.5sec.

3. Cooling Speed: 2~10 † /sec.

/ Resistance to Soldering Heat Test Conditions

□ ŷ Χ 260 ° 5 †

`H ǂ Χ 10 ° 1 sec.

Temp.:260±5

Time:10±1 sec

/ Packaging SPEC.

ǂ ` ǂ ǂ / REEL

Package Type	Units	Dimension	(unit mm ³)
ǂ ǂ ǂ ǂ			