



CS116160ET2

主要参数 MAIN CHARACTERISTICS

$I_T(AV)$	116A
V_{DRM}/V_{RRM}	1600V
I_{GT}	150mA

用途

- 直流电机控制
- 软启动交流电机控制
- 光、热温度控制

产品特性

- 台面终端芯片, 高可靠性和一致性
- 环保 RoHS 产品

APPLICATIONS

- DC motor control
- Softstart AC motor controller
- Light, heat and temperature control

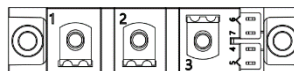
FEATURES

- Glass-passivated mesa chip for reliability and uniform
- RoHS products

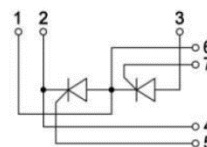
封装 Package



外形示意图



引脚示意图



电路示意图

订货信息 ORDER MESSAGES

订货型号 Order codes	印记 Marking	封装 Package
无卤-散装		
Halogen-Free-BolK		
CS116160ET2-ET2-FR	CS116160ET2	ET2



绝对最大额定值ABSOLUTE RATINGS($T_c=25^{\circ}\text{C}$)

Symbol	Test Conditions	Maximum Ratings	Unit
I_{TRMS} , I_{FRMS}	$T_{VJ}=T_{VJM}$	180	A
I_{TAVM} , I_{FAVM}	$T_c=85^{\circ}\text{C}$; 180° sine	116	
I_{TSM} , I_{FSM}	$T_{VJ}=45^{\circ}\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine	2250	A
	$t=8.3\text{ms}$ (60Hz), sine	2400	
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine	2000	
	$t=8.3\text{ms}$ (60Hz), sine	2150	
$\int i^2 dt$	$T_{VJ}=45^{\circ}\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine	25300	A^2s
	$t=8.3\text{ms}$ (60Hz), sine	23900	
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine	20000	
	$t=8.3\text{ms}$ (60Hz), sine	19100	
$(di/dt)_{cr}$	$T_{VJ}=T_{VJM}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$ $V_D=2/3V_{DRM}$	repetitive, $I_T=250\text{A}$ 150	A/ μs
	$I_G=0.45\text{A}$ $di_G/dt=0.45\text{A}/\mu\text{s}$	non repetitive, $I_T=I_{TAVM}$ 500	
$(dv/dt)_{cr}$	$T_{VJ}=T_{VJM}$; $V_{DR}=2/3V_{DRM}$ $R_{GK}=$; method 1 (linear voltage rise)	1000	V/ μs
P_{GM}	$T_{VJ}=T_{VJM}$ $t_p=30\mu\text{s}$	10	W
	$I_T=I_{TAVM}$ $t_p=300\mu\text{s}$	5	
P_{GAV}		0.5	W
V_{RGM}		10	V
T_{VJ}		-40...+125	$^{\circ}\text{C}$
T_{VJM}		125	
T_{stg}		-40...+125	
V_{ISOL}	50/60Hz, RMS $t=1\text{min}$	3000	V~
	$I_{ISOL}\leq 1\text{mA}$ $t=1\text{s}$	3600	
M_d	Mounting torque (M5)	2.5-4.0/22-35	Nm/lb.in.
	Terminal connection torque (M5)	2.5-4.0/22-35	
Weight	Typical including screws	82	g



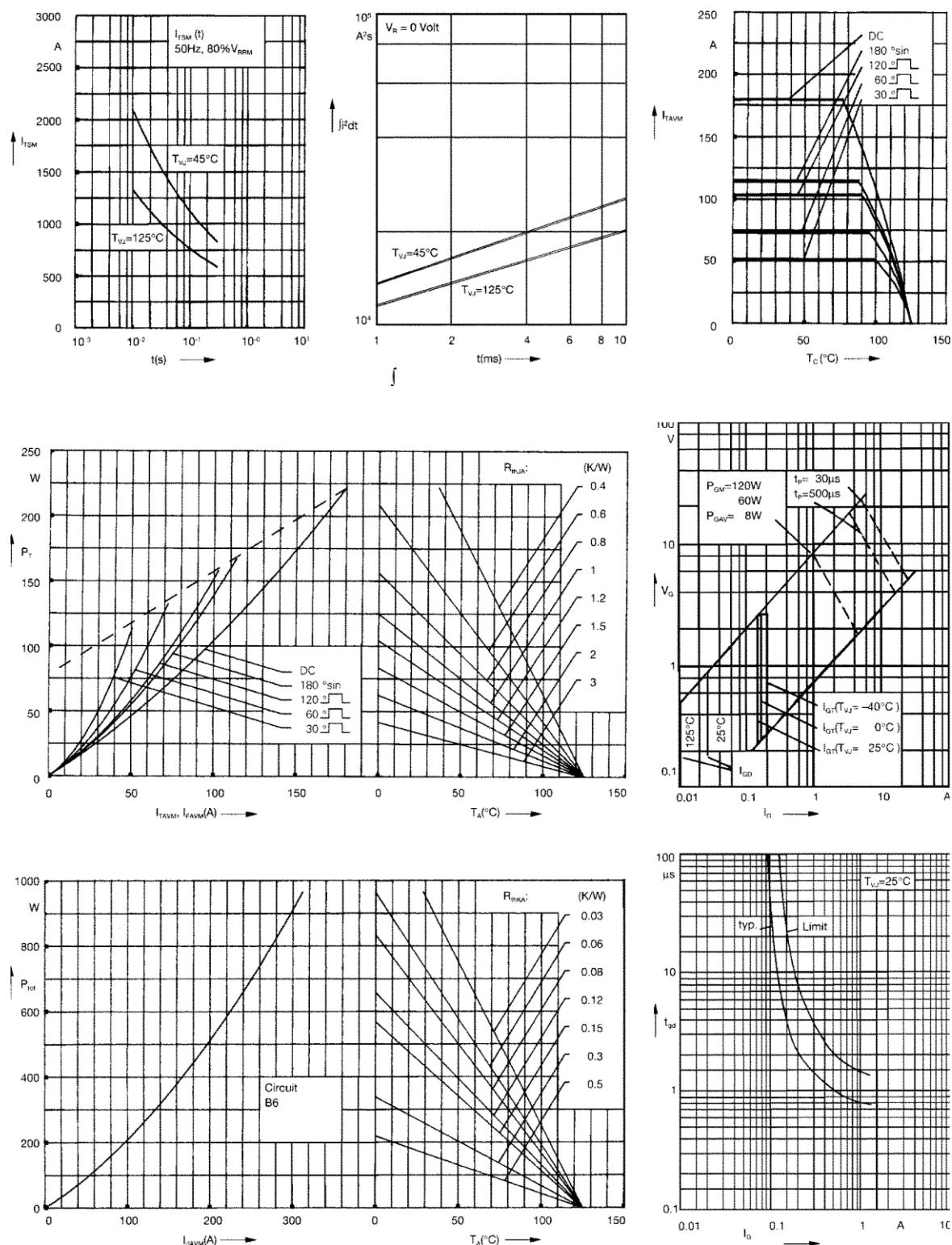
电特性 ELECTRICAL CHARACTERISTIC ($T_c=25^{\circ}\text{C}$)

Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}, I_{DRM}	$T_{VJ}=T_{VJM}; V_R=V_{RRM}; V_D=V_{DRM}$	20	mA
V_T, V_F	$I_T, I_F=300\text{A}; T_{VJ}=25^{\circ}\text{C}$	1.65	V
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}\text{C}$)	0.8	V
r_T		2.4	m
V_{GT}	$V_D=6\text{V};$ $T_{VJ}=25^{\circ}\text{C}$ $T_{VJ}=-40^{\circ}\text{C}$	2.5 2.6	V
I_{GT}	$V_D=6\text{V};$ $T_{VJ}=25^{\circ}\text{C}$ $T_{VJ}=-40^{\circ}\text{C}$	150 200	mA
V_{GD}	$T_{VJ}=T_{VJM}; V_D=2/3V_{DRM}$	0.2	V
I_{GD}		10	mA
I_L	$T_{VJ}=25^{\circ}\text{C}; t_p=10\mu\text{s}; V_D=6\text{V}$ $I_G=0.45\text{A}; di_G/dt=0.45\text{A}/\mu\text{s}$	450	mA
I_H	$T_{VJ}=25^{\circ}\text{C}; V_D=6\text{V}; R_{GK}=\text{---}$	200	mA
t_{gd}	$T_{VJ}=25^{\circ}\text{C}; V_D=1/2V_{DRM}$ $I_G=0.45\text{A}; di_G/dt=0.45\text{A}/\mu\text{s}$	2	μs
t_q	$T_{VJ}=T_{VJM}; I_T=150\text{A}; t_p=200\mu\text{s}; -di/dt=10\text{A}/\mu\text{s}$ typ. $V_R=100\text{V}; dv/dt=20\text{V}/\mu\text{s}; V_D=2/3V_{DRM}$	185	μs
Q_s	$T_{VJ}=T_{VJM}; I_T, I_F=50\text{A}; -di/dt=6\text{A}/\mu\text{s}$	170	μC
I_{RM}		45	A
R_{thJC}	per thyristor/diode; DC current per module	0.22 0.11	K/W
R_{thJK}	per thyristor/diode; DC current per module	0.42 0.21	K/W
d_s	Creeping distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2





特征曲线ELECTRICAL CHARACTERISTICS (curves)





特征曲线ELECTRICAL CHARACTERISTICS (curves)

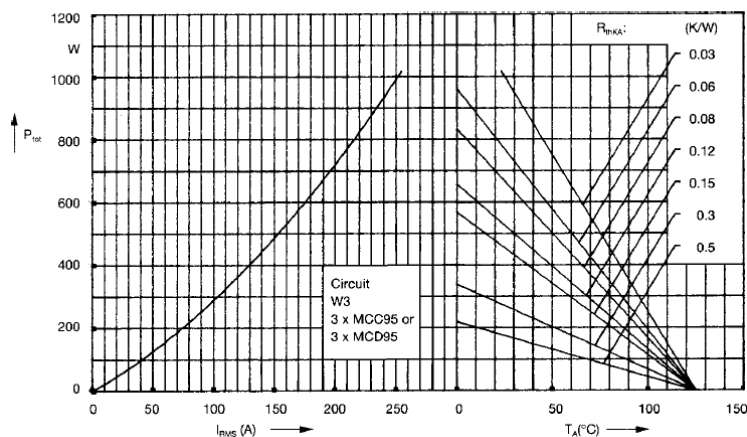


Fig. 7 Three phase AC-controller:
Power dissipation versus RMS
output current and ambient
temperature

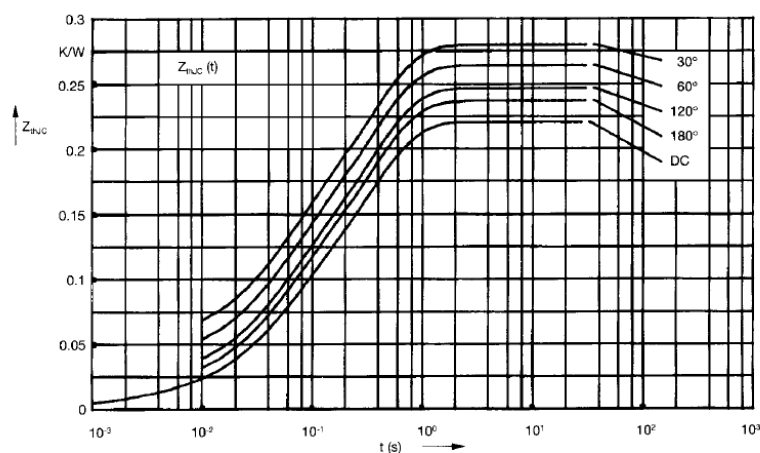


Fig. 8 Transient thermal impedance
junction to case (per thyristor or
diode)

$R_{\theta JC}$ for various conduction angles d:

d	$R_{\theta JC}$ (K/W)
DC	0.22
180°	0.23
120°	0.25
60°	0.27
30°	0.28

Constants for $Z_{\theta JC}$ calculation:

i	$R_{\theta i}$ (K/W)	t_i (s)
1	0.0066	0.0019
2	0.0678	0.0477
3	0.1456	0.344

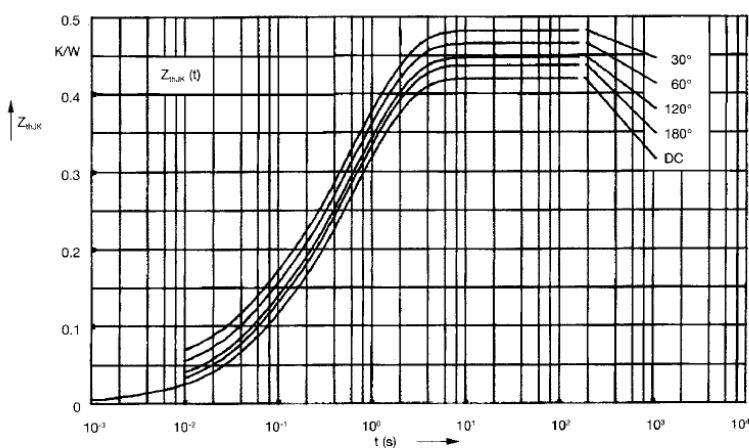


Fig. 9 Transient thermal impedance
junction to heatsink (per thyristor
or diode)

$R_{\theta JK}$ for various conduction angles d:

d	$R_{\theta JK}$ (K/W)
DC	0.42
180°	0.43
120°	0.45
60°	0.47
30°	0.48

Constants for $Z_{\theta JK}$ calculation:

i	$R_{\theta i}$ (K/W)	t_i (s)
1	0.0066	0.0019
2	0.0678	0.0477
3	0.1456	0.344
4	0.2	1.32

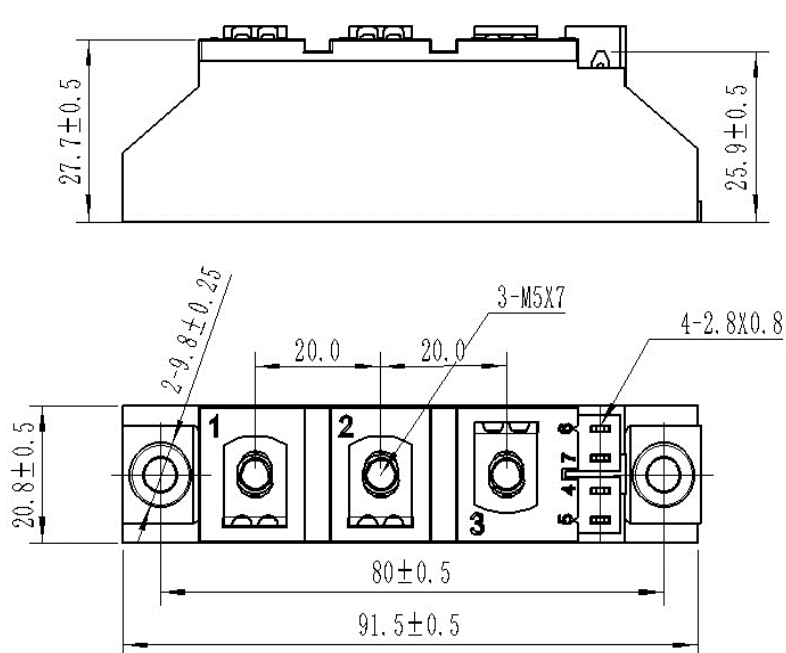




外形尺寸 PACKAGE MECHANICAL DATA

ET2

单位 Unit : mm





注意事项

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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知。

NOTE

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2. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this. specification sheet and is subject to change without prior notice.

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