I lj WbVnKoh h Sls

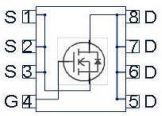
V_{DS}	100	V
$R_{DS(on),max}$	11.8	mΩ
I_D	71	A

- N-channel, normal level
- Excellent gate charge x $R_{DS(on)}$ product (FOM)
- Very low on-resistance $R_{DS(on)}$
- 150 °C operating temperature
- Pb-free lead plating; RoHS compliant
- Qualified according to JEDEC[1] for target application
- Ideal for high-frequency switching and synchronous rectification
- Halogen-free according to IEC61249-2-21

PG-TDSON-8

RoHS Halogen-Free

MskZ	I SVf SbZ	F Slf dl b
BSC118N10NS G	PG-TDSON-8	118N10NS



F Sr dh oh I Snd bm) at T_j=25 °C, unless otherwise specified

I SlSh ZnZl	Ksh Tj g	=j i Wdhj i m	OSgpZ	Ni dh
Continuous drain current	I_D	T_C=25 °C	71	A
		T_C=100 °C	44	
		T_A=25 °C, R_{thJA}=45 K/W[2]	11	
Pulsed drain current[3]	$I_{D,pulse}$	T_C=25 °C	280	
Avalanche energy, single pulse	E_{AS}	I_D=50 A, R_{GS}=25 Ω	155	mJ
Gate source voltage	V_{GS}		±20	V
Power dissipation	P_{tot}	T_C=25 °C	114	W
Operating and storage temperature	T_j, T_{stg}		-55 ... 150	°C
IEC climatic category; DIN IEC 68-1			55/150/56	

[1] J-STD20 and JESD22

I SI Sh ZnZI	Ksh Tj g	=j i Wdhj i m	OSgpZm			Ni ch
			h d -	nsk -	h Sr -	
McZI h SgVc SI SVnZI dmnd/m						
Thermal resistance, junction - case	R_{thJC}	bottom	-	-	1.1	K/W
		top	-	-	18	
Thermal resistance, junction - ambient	R_{thJA}	minimal footprint	-	-	62	
		6 cm² cooling area[2)]	-	-	45	

AgZVrId/SgVc SI SVnZI dmnd/m) at T_j=25 °C, unless otherwise specified

KrSmd/V Vc SI SVnZI dmnd/m						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0 V, I_D=1 mA	100	-	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=70 µA	2	3	4	
Zero gate voltage drain current	I_{DSS}	V_{DS}=100 V, V_{GS}=0 V, T_j=25 °C	-	0.01	1	µA
		V_{DS}=100 V, V_{GS}=0 V, T_j=125 °C	-	10	100	
Gate-source leakage current	I_{GSS}	V_{GS}=20 V, V_{DS}=0 V	-	1	100	nA
Drain-source on-state resistance	$R_{DS(on)}$	V_{GS}=10 V, I_D=50 A	-	10	11.8	mΩ
Gate resistance	R_G		-	0.8	-	Ω
Transconductance	g_{fs}	$\|V_{DS}\|>2\|I_D\|R_{DS(on)max}$, I_D=50 A	33	65	-	S

[2)] Device on 40 mm x 40 mm x 1.5 mm epoxy PCB FR4 with 6 cm² (one layer, 70 µm thick) copper area for drain connection. PCB is vertical in still air.

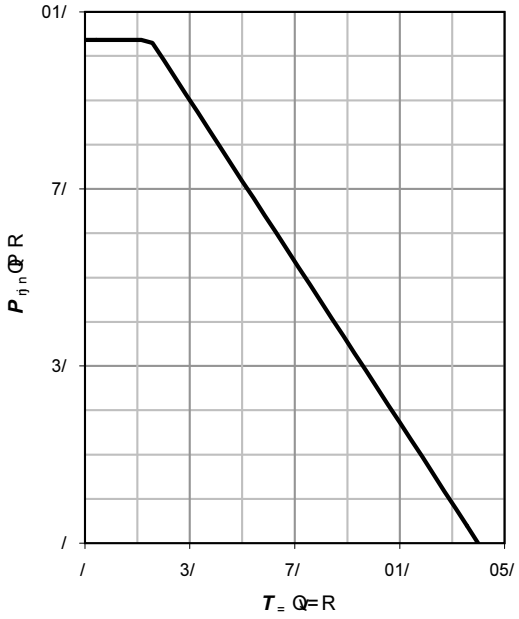
[3)] see figure 3

I SI Sh ZnZI	Ksh Tj g	=j i Wdhj i m	OSgpZm			Ni ch
			h d -	nsk -	h Sr -	
>si Sh dV VcSI SVnZI dmdVm						
Input capacitance	C_{iss}	V_{GS}=0 V, V_{DS}=50 V, f=1 MHz	-	2800	3700	pF
Output capacitance	C_{oss}		-	420	560	
Reverse transfer capacitance	C_{rss}		-	26	39	
Turn-on delay time	$t_{d(on)}$	V_{DD}=50 V, V_{GS}=10 V, I_D=25 A, R_G=1.6 Ω	-	21	32	ns
Rise time	t_r		-	21	32	
Turn-off delay time	$t_{d(off)}$		-	32	48	
Fall time	t_f		-	8	12	
Gate Charge Characteristics[4)]						
Gate to source charge	Q_{gs}	V_{DD}=50 V, I_D=25 A, V_{GS}=0 to 10 V	-	14	19	nC
Gate to drain charge	Q_{gd}		-	10	15	
Switching charge	Q_{sw}		-	19	27	
Gate charge total	Q_g		-	42	56	
Gate plateau voltage	$V_{plateau}$		-	4.9	-	V
Output charge	Q_{oss}	V_{DD}=50 V, V_{GS}=0 V	-	45	60	nC
JZpZI mZ>gjWZ						
Diode continous forward current	I_S	T_C=25 °C	-	-	70	A
Diode pulse current	$I_{S,pulse}$		-	-	280	
Diode forward voltage	V_{SD}	V_{GS}=0 V, I_F=50 A, T_j=25 °C	-	0.94	1.2	V
Reverse recovery time	t_{rr}	V_R=50 V, I_F=25 A, di_F/dt=100 A/µs	-	81	-	ns
Reverse recovery charge	Q_{rr}		-	188	-	nC

[4)] See figure 16 for gate charge parameter definition

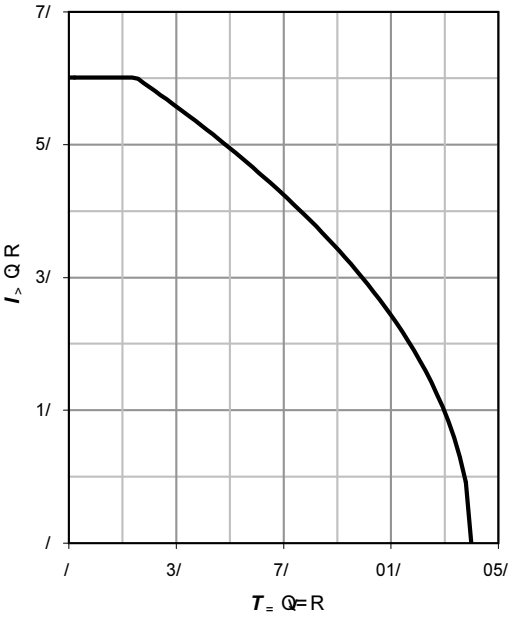
0 l j q Zl Wdhmmdk Sndj i

P_{tot}=f(T_C)



1 >lSdl Vol lZi n

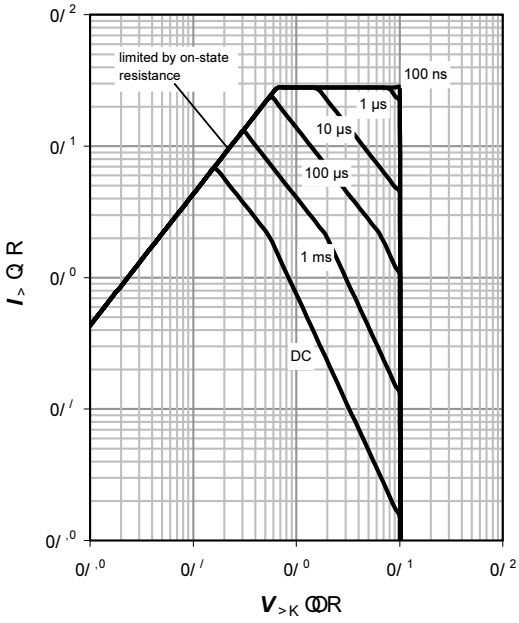
I_D=f(T_C); V_{GS}≥10 V



2 KSaZj kZl Snd b SlZS

I_D=f(V_{DS}); T_C=25 °C; D=0

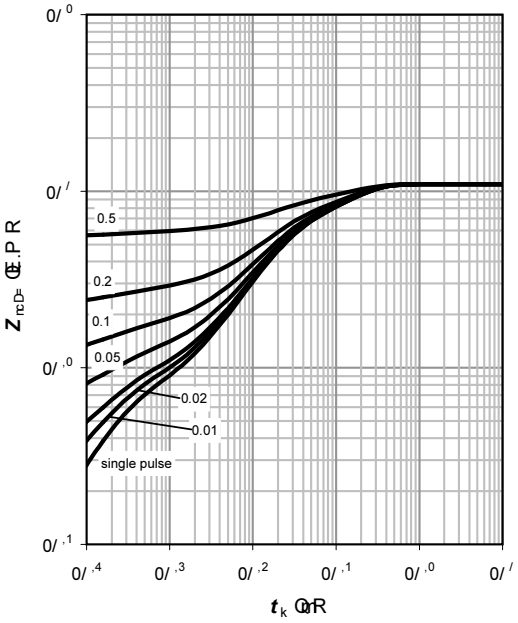
parameter: t_p



3 F Sr - rl Si mdZi nrc Zl h Sgdh kZWSi VZ

Z_{thJC}=f(t_p)

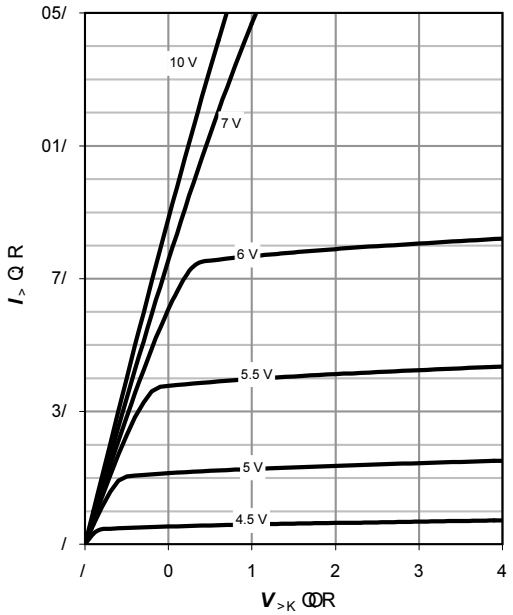
parameter: $D=t_p/T$



4 Msk-jorkonVcSlSVnZldmdVm

I_D=f(V_{DS}); T_j=25 °C

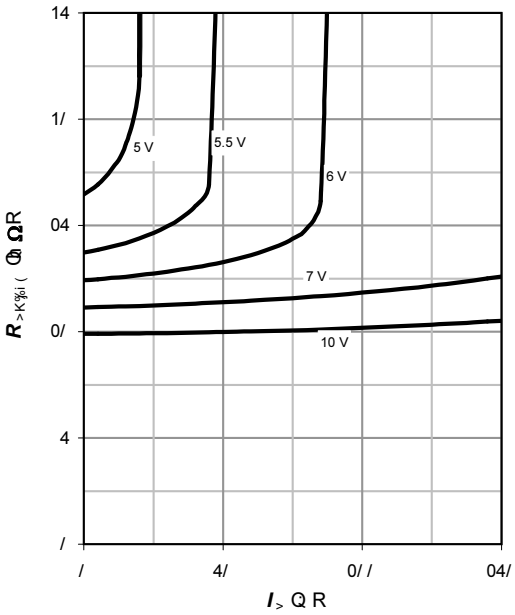
parameter: V_{GS}



5 Msk-WlSd,mjolVZjilZmdmSiVZ

$R_{DS(on)}$=f(I_D); T_j=25 °C

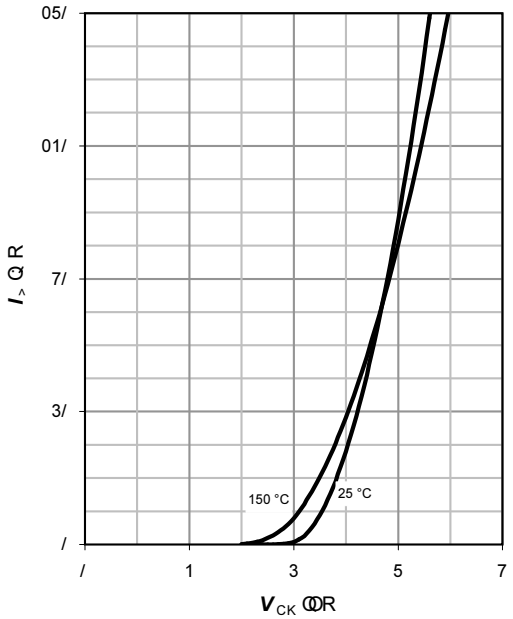
parameter: V_{GS}



6 Msk-rlSimaZlVcSlSVnZldmdVm

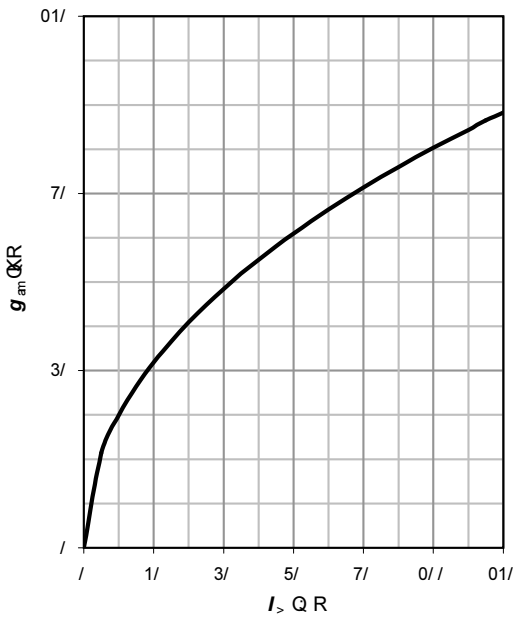
I_D=f(V_{GS}); $|V_{DS}|>2|I_D|R_{DS(on)max}$

parameter: T_j



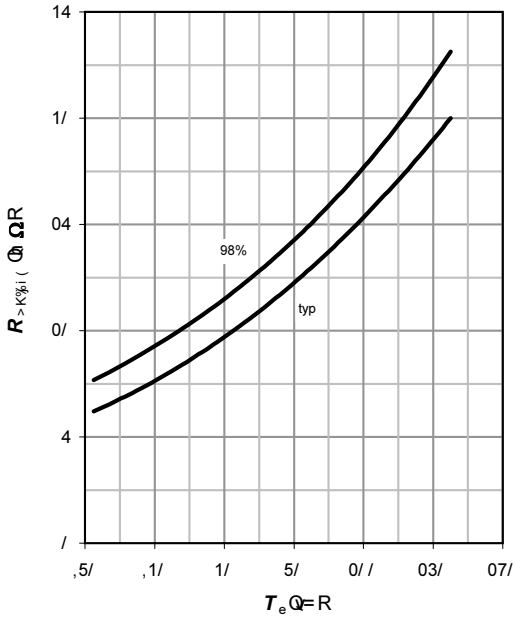
7 Msk-ajlqSlWrlSimVjiWbVrnSiVZ

g_{fs}=f(I_D); T_j=25 °C



8 >lSdl ,mj olVZj i ,mmSnZ lZmdmmSi VZ

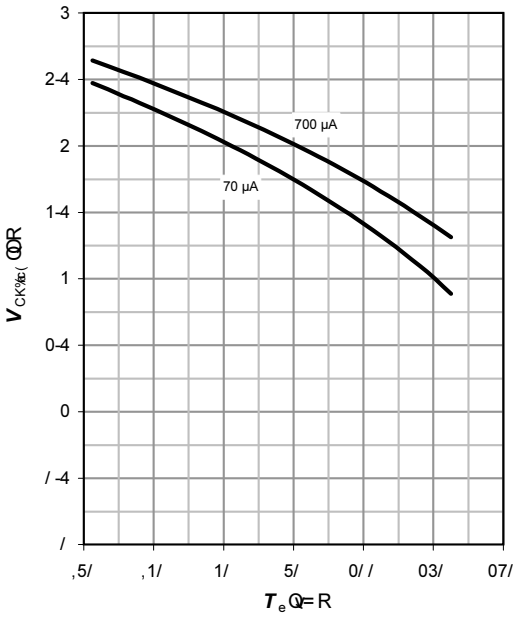
$R_{DS(on)}=f(T_j)$; $I_D=50$ A; $V_{GS}=10$ V



0/ Msk-bSnZ nclZmcj gWpj gnSbZ

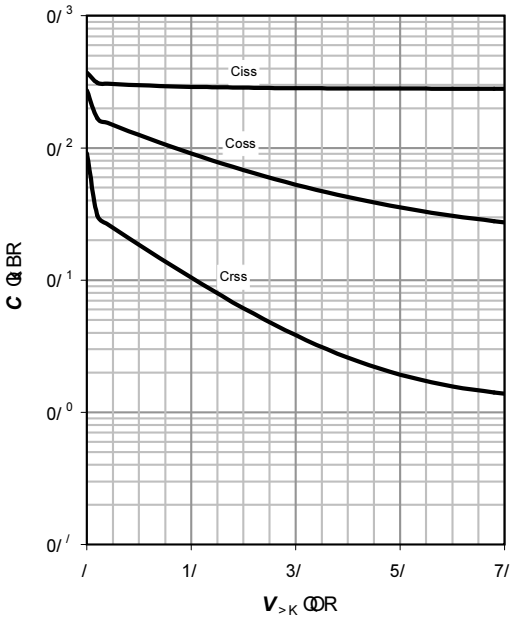
$V_{GS(th)}=f(T_j)$; $V_{GS}=V_{DS}$

parameter: I_D



00 Msk-VSkSVdnSi VZm

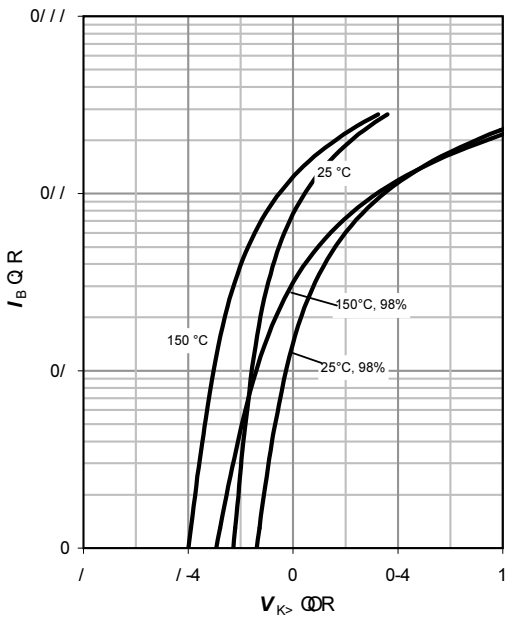
$C=f(V_{DS})$; $V_{GS}=0$ V; $f=1$ MHz



01 Bj lq SlWVcSlSVnZldmmdVmj alZpZlmZWdj WZ

$I_F=f(V_{SD})$

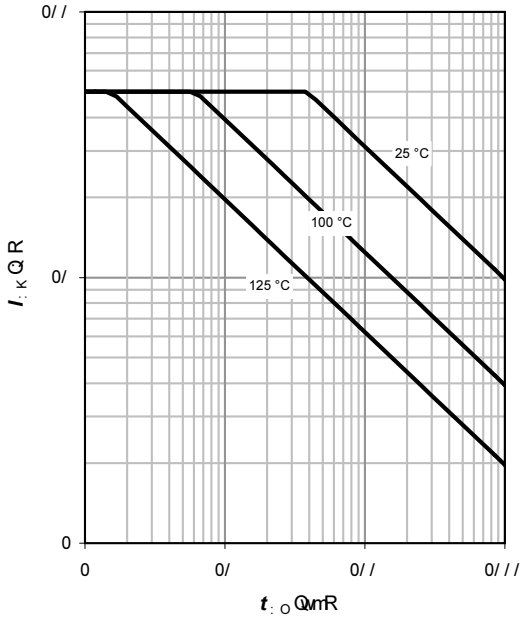
parameter: T_j



02 : pSgSi VcZ VcSl SVnZl dmdVm

I_{AS}=f(t_{AV}); R_{GS}=25 Ω

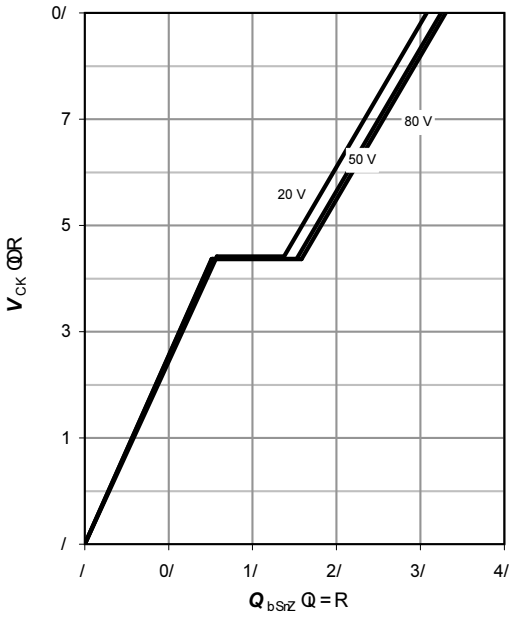
parameter: $T_{j(start)}$



03 Msk - bSnZ VcSl bZ

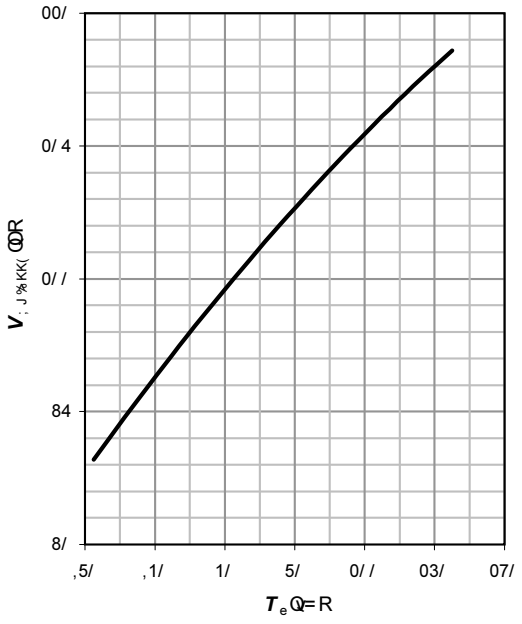
V_{GS}=f(Q_{gate}); I_D=50 A pulsed

parameter: V_{DD}

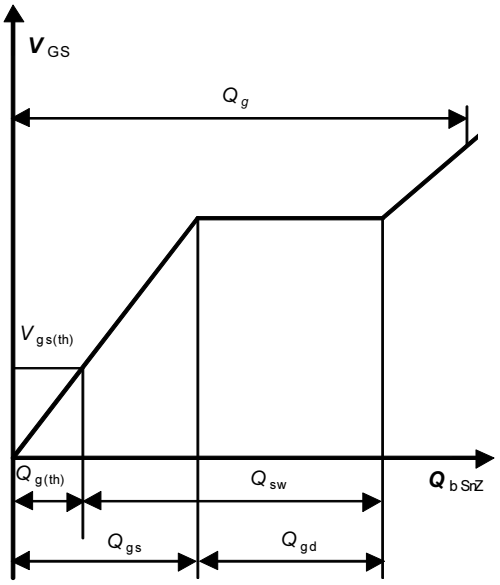


04 >lSdl ,mj olVZ TlZSf Wjl q i pj gnSbZ

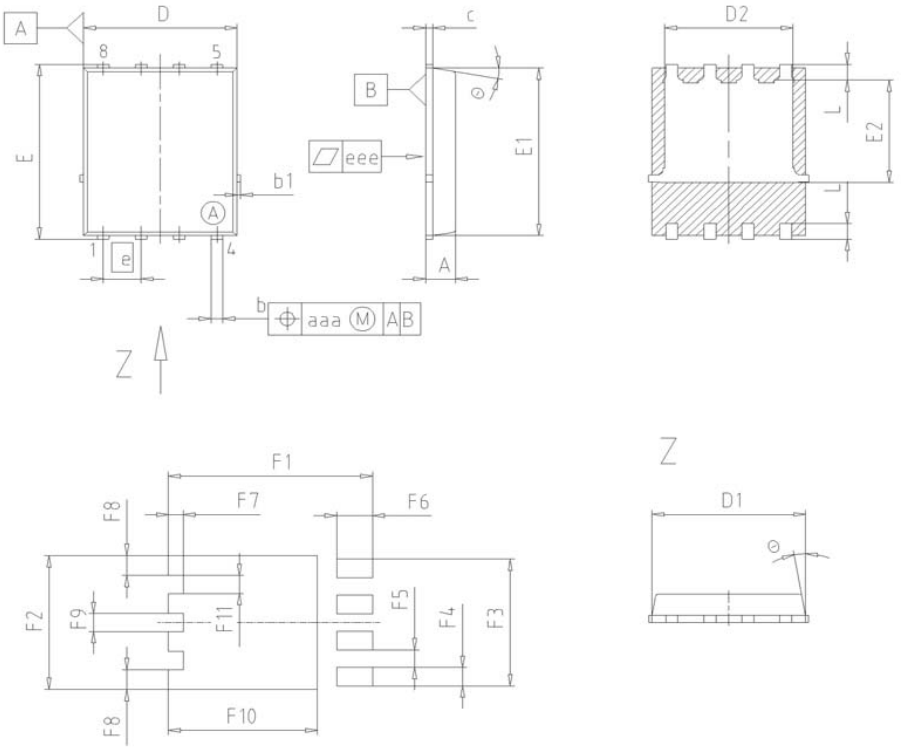
$V_{BR(DSS)}$=f(T_j); I_D=1 mA



05 CSnZ VcSl bZ q SpZaj lh m



I SVf SbZ HorgdI Z9I C,M>KHG,7

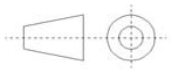


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.10	0.035	0.043
b	0.34	0.54	0.013	0.021
b1	0.02	0.22	0.001	0.008
c	0.15	0.35	0.006	0.014
D=D1	4.95	5.35	0.195	0.211
D2	4.20	4.40	0.165	0.173
E	5.95	6.35	0.234	0.250
E1	5.70	6.10	0.224	0.240
E2	3.40	3.80	0.134	0.150
e	1.27		0.050	
N	8		8	
L	0.45	0.65	0.018	0.026
□	8.5°	11.5°	8.5°	11.5°
aaa	0.25		0.010	
eee	0.05		0.002	
F1	6.75	6.95	0.266	0.274
F2	4.60	4.80	0.181	0.189
F3	4.36	4.56	0.172	0.180
F4	0.55	0.75	0.022	0.030
F5	0.52	0.72	0.020	0.028
F6	1.10	1.30	0.043	0.051
F7	0.40	0.60	0.016	0.024
F8	0.60	0.80	0.024	0.031
F9	0.53	0.73	0.021	0.029
F10	4.90	5.10	0.193	0.201
F11	0.53	0.73	0.021	0.029

DOCUMENT NO.
Z8B00003332

SCALE
0 2.5 0 2.5 5mm

EUROPEAN PROJECTION



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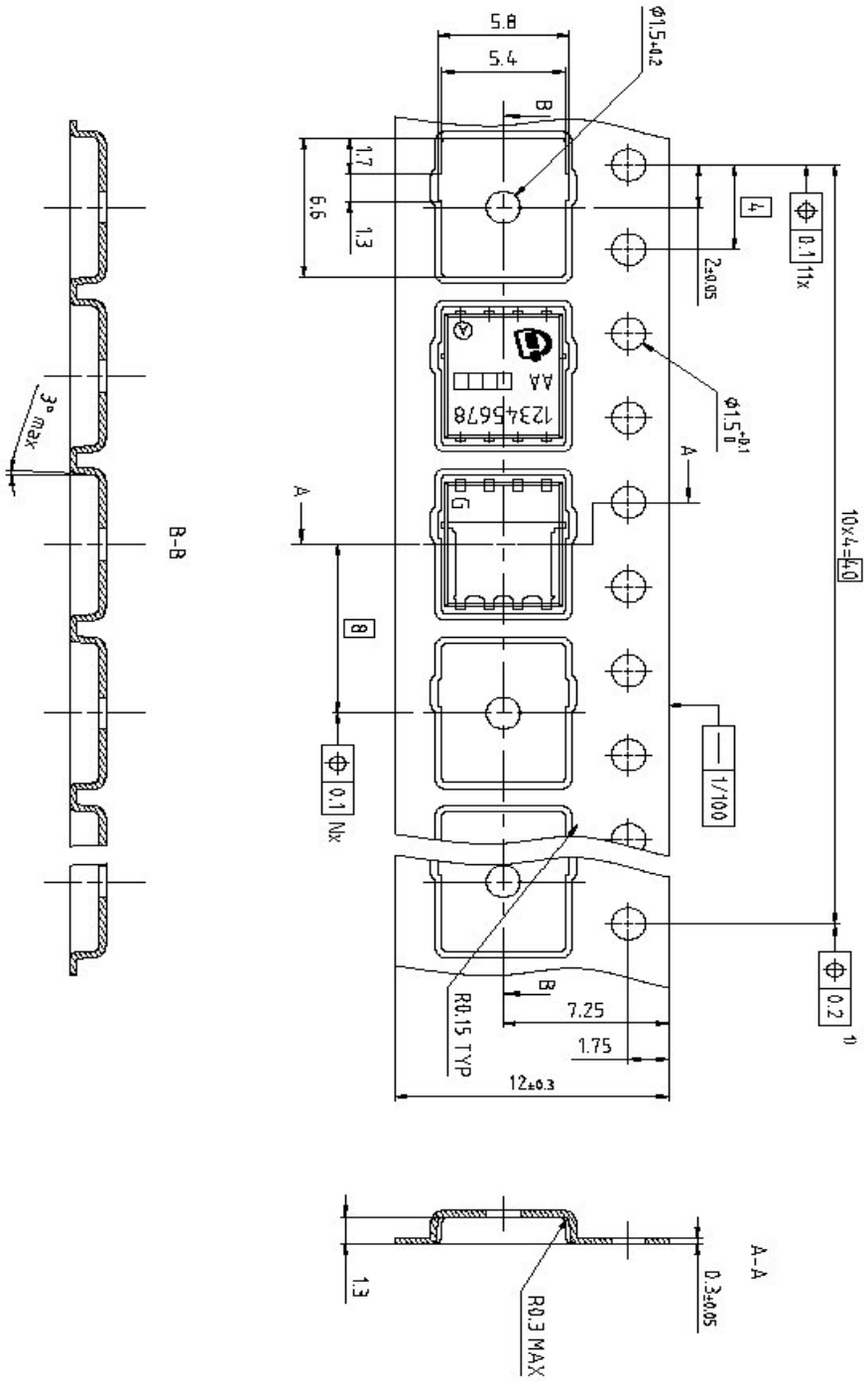
REVISION
03



Dimensions in mm

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