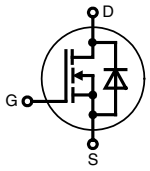
CoolMOS™ [1] Power MOSFET in ISOPLUS247™ Package

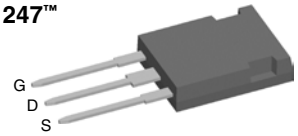
I_{D25} = 25 A
V_{DSS} = 800 V
$R_{DS(on)}$ = 125 mΩ

N-Channel Enhancement Mode
Low R_{DSon}, High V_{DSS} MOSFET
Package with Electrically Isolated Base



ISOPLUS 247™

E153432



G = Gate, D = Drain, S = Source

MOSFET			
Symbol	**Conditions**	**Maximum Ratings**	
V_{DSS}	T_{VJ} = 25°C to 150°C	800	V
V_{GS}		± 20	V
I_{D25}	T_C = 25°C	25	A
I_{D90}	T_C = 90°C	18	A
dv/dt	$V_{DS} < V_{DSS}$; $I_F \le 17$ A | di_F/dt | ≤ 100 A/µs; T_{VJ} = 150°C	6	V/ns
E_{AS}	I_D = 4 A; L = 80 mH; T_C = 25°C	0.67	mJ
E_{AR}	I_D = 17 A; L = 3.3 mH; T_C = 25°C	0.5	mJ

Symbol	Conditions (T_{VJ} = 25°C, unless otherwise specified)	Characteristic Values min.	typ.	max.	
R_{DSon}	V_{GS} = 10 V; $I_D = I_{D90}$		125	150	mΩ
$V_{GS(th)}$	V_{DS} = 20 V; I_D = 2 mA	2		4	V
I_{DSS}	$V_{DS} = V_{DSS}$; V_{GS} = 0 V; T_{VJ} = 25°C			50	µA
	T_{VJ} = 125°C		100		µA
I_{GSS}	V_{GS} = ± 20 V; V_{DS} = 0 V			200	nA
Q_g	V_{GS} = 10 V; V_{DS} = 640 V; I_D = 34 A		180	355	nC
Q_{gs}			24		nC
Q_{gd}			92		nC
$t_{d(on)}$	V_{GS} = 10 V; V_{DS} = 640 V; I_D = 34 A; R_G = 2.2 Ω		25		ns
t_r			15		ns
$t_{d(off)}$			72		ns
t_f			6		ns
V_F	(reverse conduction) I_F = 12.5 A; V_{GS} = 0 V		1	1.3	V
R_{thJC}				0.5	K/W

Features

- ISOPLUS247™ package with DCB Base
  - Electrical isolation towards the heatsink
  - Low coupling capacitance to the heatsink for reduced EMI
  - High power dissipation
  - High temperature cycling capability of chip on DCB
  - JEDEC TO-247AD compatible
  - Easy clip assembly
- fast CoolMOS™ [1] power MOSFET 3rd generation
  - High blocking capability
  - Low on resistance
  - Avalanche rated for unclamped inductive switching (UIS)
  - Low thermal resistance due to reduced chip thickness
- Enhanced total power density

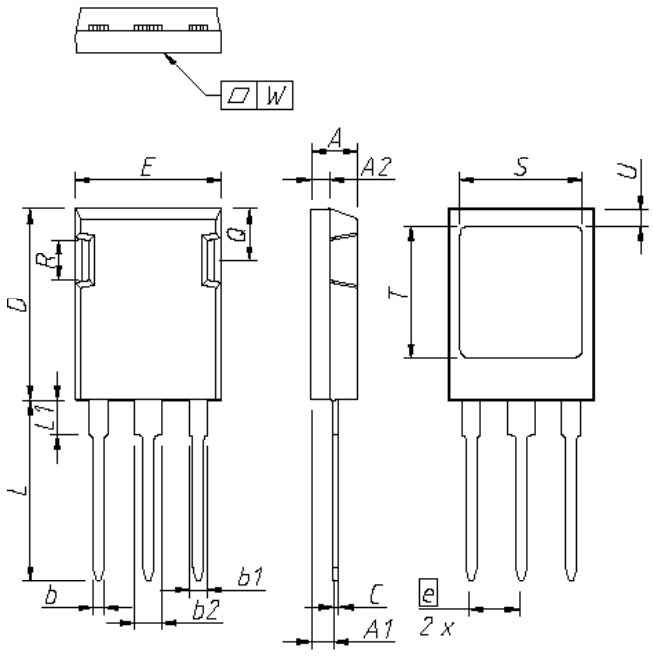
Applications

- Switched mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Power factor correction (PFC)
- Welding
- Inductive heating

[1] CoolMOS™ is a trademark of Infineon Technologies AG.

Component			
Symbol	**Conditions**	**Maximum Ratings**	
V_{ISOL}	$I_{ISOL} \leq 1$ mA; 50/60 Hz	2500	V~
T_{VJ}		-40...+150	°C
T_{stg}		-40...+125	°C
T_L	1.6 mm from case for 10 s	300	°C
F_C	mounting force with clip	20 ... 120	N

Symbol	**Conditions**	**Characteristic Values**			
		min.	**typ.**	**max.**	
C_P	coupling capacity bewtween shorted pin and mounting tab in the case		30		pF
R_{thCH}	with heatsink compound		0.25		K/W
Weight			6		g



DIM.	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	4,83	5,21	0,190	0,205
A1	2,29	2,54	0,090	0,100
A2	1,91	2,16	0,075	0,085
b	1,14	1,40	0,045	0,055
b1	1,91	2,15	0,075	0,085
b2	2,92	3,20	0,115	0,126
C	0,61	0,83	0,024	0,033
D	20,80	21,34	0,819	0,840
E	15,75	16,13	0,620	0,635
e	5,45 BSC		0,215 BSC	
L	19,81	20,60	0,780	0,811
L1	3,81	4,38	0,150	0,172
Q	5,59	6,20	0,220	0,244
R	4,32	4,85	0,170	0,191
S	13,21	13,72	0,520	0,540
T	15,75	16,26	0,620	0,640
U	1,65	2,03	0,065	0,080
W	-	0,10	-	0,004

Die konvexe Form des Substrates ist typ. < 0.04 mm über der Kunststoff-oberfläche der Bauteilunterseite
The convex bow of substrate is typ. < 0.04 mm over plastic surface level of device bottom side

Die Gehäuseabmessungen entsprechen demTyp TO-247 AD gemäß JEDEC außer Schraubloch und $L_{max.}$
This drawing will meet all dimensions requirement of JEDEC outline TO-247 AD except screw hole and except $L_{max.}$