

ART2K0FE; ART2K0FES; ART2K0FEG

Power LDMOS transistor

Rev. 6 — 10 March 2023

AMPLEON

Product data sheet

1. Product profile

1.1 General description

Based on Advanced Rugged Technology (ART), this 2000 W LDMOS RF power transistor has been designed to cover a wide range of applications for ISM, broadcast and communications. The unmatched transistor has a frequency range of 1 MHz to 400 MHz.

Table 1. Application information

Test signal	f	V _{DS}	P _L	G _p	η _D
	(MHz)	(V)	(W)	(dB)	(%)
CW	41.0	65	1600	29.0	79
CW	60.0	65	1750	26.8	80
CW pulsed [1]	64.0	63	2180	27.5	78
CW [2]	87.5 to 108	60	1650	26	83.5
DVB-T [3][4]	170 to 240	63	250	21	48
CW	352	65	1500	19	74

[1] $t_p = 10 \mu s$; $\delta = 10 \%$.

[2] Center band performance numbers across the indicated frequency range.

[3] Typical performance numbers across the indicated frequency range.

[4] Symmetric Ultra Wideband Doherty.

1.2 Features and benefits

- High breakdown voltage enables class E operation up to $V_{DS} = 53 \text{ V}$
- Qualified up to a maximum of $V_{DS} = 65 \text{ V}$
- Characterized from 30 V to 65 V to support a wide range of applications
- Integrated dual sided ESD protection enables class C operation and complete switch off of the transistor
- Excellent ruggedness with no device degradation
- High efficiency
- Excellent thermal stability
- Designed for broadband operation
- For RoHS compliance see the product details on the Ampleon website

1.3 Applications

- Industrial, scientific and medical applications
 - ◆ Plasma generators
 - ◆ MRI systems
 - ◆ CO₂ lasers
 - ◆ Particle accelerators
- Broadcast
 - ◆ FM radio
 - ◆ VHF TV
- Communications
 - ◆ Non cellular communications
 - ◆ UHF radar

2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
ART2K0FE (SOT539AN)			
1	drain1		
2	drain2		
3	gate1		
4	gate2		
5	source [1]		
ART2K0FES (SOT539BN)			
1	drain1		
2	drain2		
3	gate1		
4	gate2		
5	source [1]		
ART2K0FEG (SOT1248C)			
1	drain1		
2	drain2		
3	gate1		
4	gate2		
5	source [1]		

[1] Connected to flange.