Features

- Ultra-low $R_{DS(ON)}$
- Low Gate Charge
- 100% UIS Tested, 100% R_g Tested
- Pb-free Lead Plating
- Halogen-free and RoHS-compliant

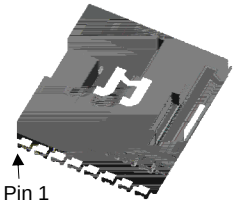
Product Summary

	Value	Unit
	150	V
	3.2	V
	263	A
	3.3	mΩ

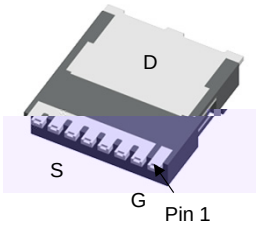
Applications

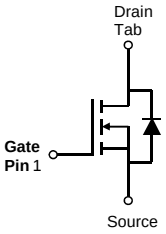
- Power Management in Telecom., Industrial Automation, CE
- Current Switching in DC/DC & AC/DC (SR) Sub-systems
- Motor Driving in Power Tool, E-vehicle, Robotics

PowerJE®10x12 Top



PowerJE®10x12 Bottom





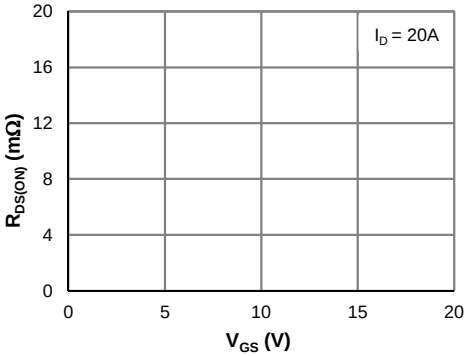
	Package	# of Pins	Marking	MSL	T_J (°C)	Media	Quantity (pcs)
JMSH1504ATL-13	PowerJE®10x12 (1)	8	SH1504A	1	-55 to 175	13-inch Reel	2000

Note 1: PowerJE® is a registered trademark of JieJie Micro., its package outline is compatible to that of TO-LeadLess (TOLL).

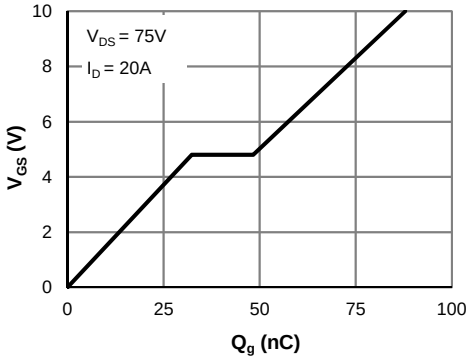
Absolute Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
		V_{DS}		V
		V_{GS}		V
		I_D	**263**	
	T_C = 100°C		**186**	
Pulsed Drain Current(3)		I_{DM}	**817**	A
Avalanche Current(4)		I_{AS}	**49**	A
Avalanche Energy(4)		E_{AS}	**1201**	mJ
Power Dissipation(5)	T_C = 25°C	P_D	**600**	**W**
	T_C = 100°C		**300**	
Junction & Storage Temperature Range		T_J, T_{STG}	**-55 to 175**	°C

$R_{DS(ON)}$ vs. V_{GS}



Gate Charge



Electrical Characteristics (@ T_J = 25°C unless otherwise specified)

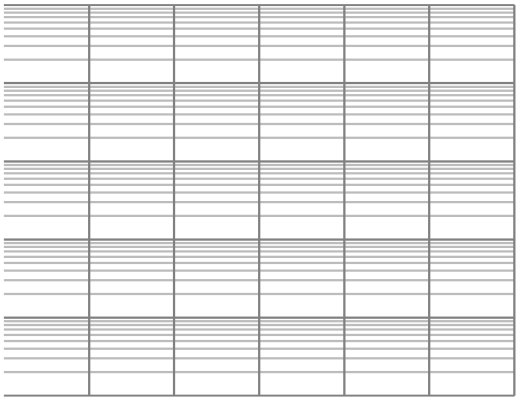
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250μA, V_{GS} = 0V	150			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 120V, V_{GS} = 0V			1.0	μA
		T_J = 55°C			5.0	
Gate-Body Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.5	3.2	4.5	V
Static Drain-Source ON-Resistance	$R_{DS(ON)}$			3.3	4.2	mΩ
Forward Transconductance	g_{FS}	V_{DS} = 5V, I_D = 20A		65		S
Diode Forward Voltage	V_{SD}	I_S = 1A, V_{GS} = 0V		0.71	1.0	V
Diode Continuous Current	I_S				600	A
	C_{iss}			6540		pF
	C_{oss}			772		pF
	C_{rss}			6.7		pF
Gate Resistance	R_g	V_{GS} = 0V, V_{DS}= 0V, f = 1MHz		2.4		Ω
Total Gate Charge (@ V_{GS} = 10V)	Q_g			88		nC
Total Gate Charge (@ V_{GS} = 6.0V)	Q_g	V_{GS} = 0 to 10V		57		nC
Gate Source Charge	Q_{gs}	V_{DS} = 75V, I_D = 20A		32		nC
Gate Drain Charge	Q_{gd}			16		nC
Turn-On DelayTime	$t_{D(on)}$			48		ns
Turn-On Rise Time	t_r	V_{GS} = 10V, V_{DS} = 75V		90		ns
Turn-Off DelayTime	$t_{D(off)}$	R_L = 3.75Ω, R_{GEN} = 6Ω		94		ns
Turn-Off Fall Time	t_f			60		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F = 15A, dI_F/dt = 100A/μs		122		ns
Body Diode Reverse Recovery Charge	Q_{rr}			279		nC

	Symbol	U		Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	45	55	°C/W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$		0.25	°C/W

Notes:

2. Computed continuous current assumes the condition of T_{J_Max} while the actual continuous current depends on the thermal & electro-mechanical application board design.

Typical Electrical & Thermal Characteristics



Typical Electrical & Thermal Characteristics

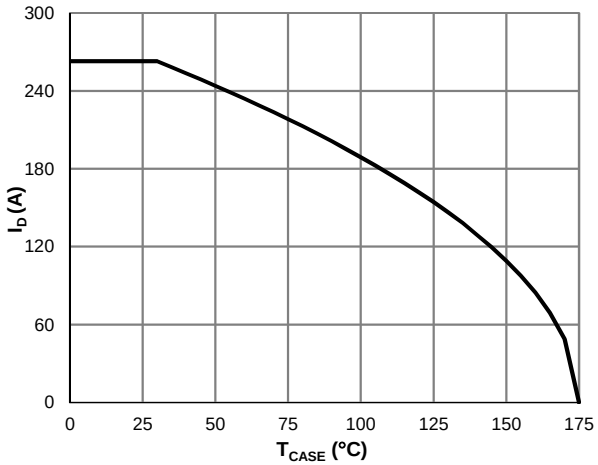


Figure 7: Current De-rating

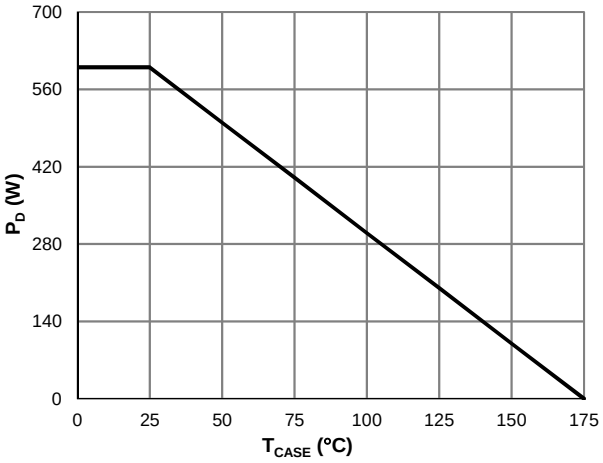


Figure 8: Power De-rating

PowerJE®10x12 Package Information

DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	2.20	2.30	2.40
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
b2	0.42	0.46	0.50
c	0.40	0.50	0.60
D	10.28	10.38	10.58
D2		3.30	
E	9.70	9.90	10.10