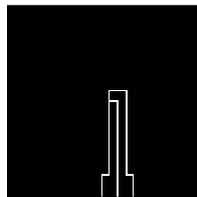


Thermal Characteristics

Characteristic	Symbol	Max	Unit
Thermal resistance, channel to ambient (t = 5 s) (Note 2a)	R _{th} (ch-a)	74.4	°C/W
Thermal resistance, channel to ambient (t = 5 s) (Note 2b)	R _{th} (ch-a)	148.8	°C/W

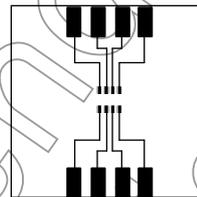
Note 1: Ensure that the channel temperature does not exceed 150°C.

Note 2: (a) Device mounted on a glass-epoxy board (a) (b) Device mounted on a glass-epoxy board (b)



(a)

FR-4
25.4 × 25.4 × 0.8
(Unit: mm)



(b)

FR-4
25.4 × 25.4 × 0.8
(Unit: mm)

Note 3: V_{DD} = 24 V, T_{ch} = 25 °C (initial), L = 500 μH, R_G = 1 Ω, I_{AR} = 8 A

Note 4: Repetitive rating: pulse width limited by maximum channel temperature

Note 5: * Weekly code: (Three digits)



Week of manufacture
(01 for the first week of the year, continuing up to 52 or 53)
Year of manufacture
(The last digit of the year)

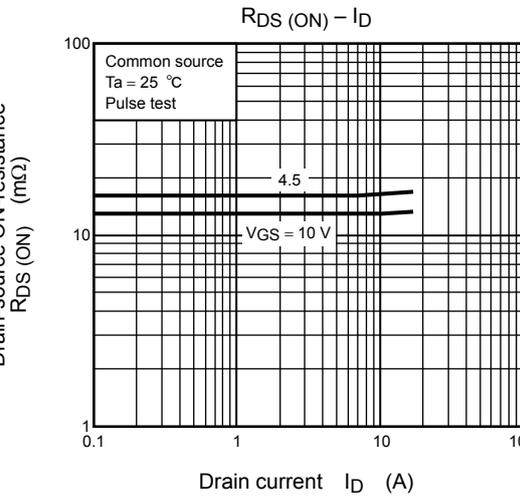
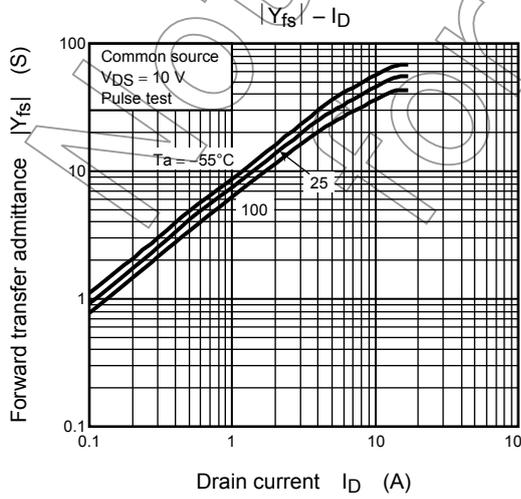
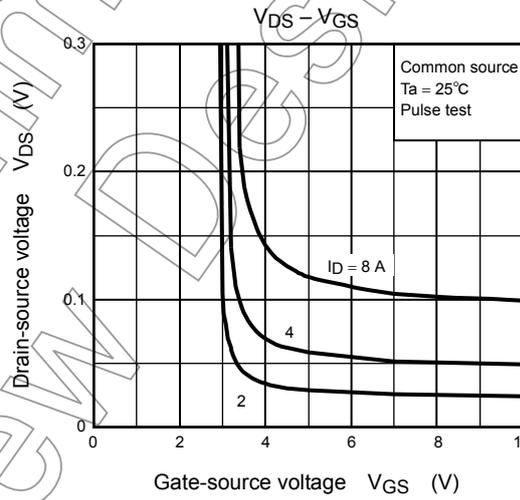
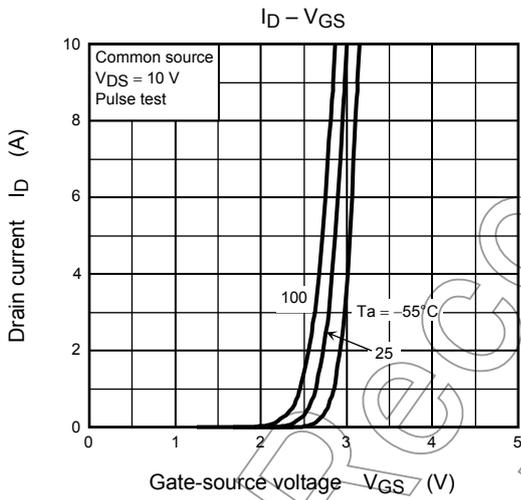
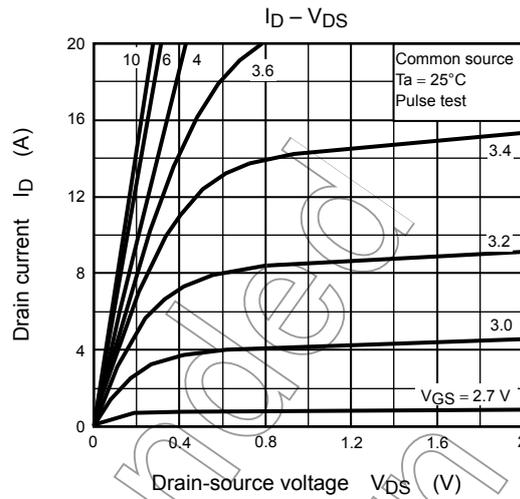
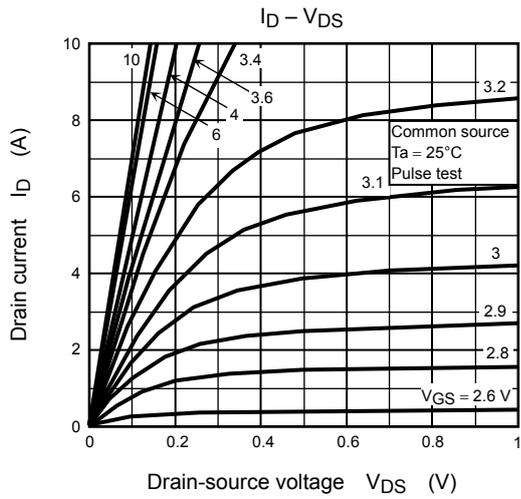
Not Recommended for New Design

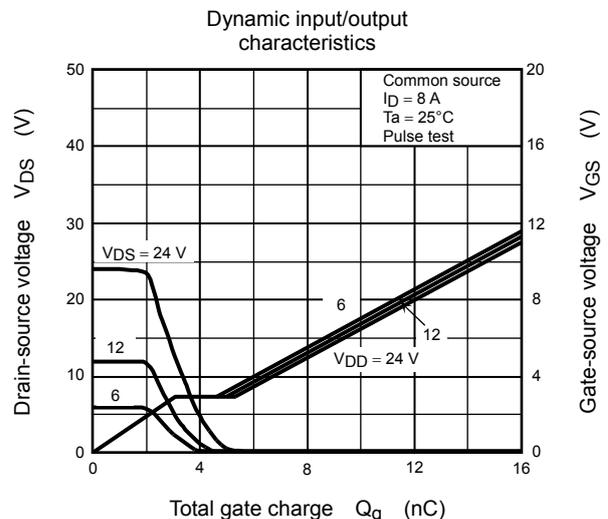
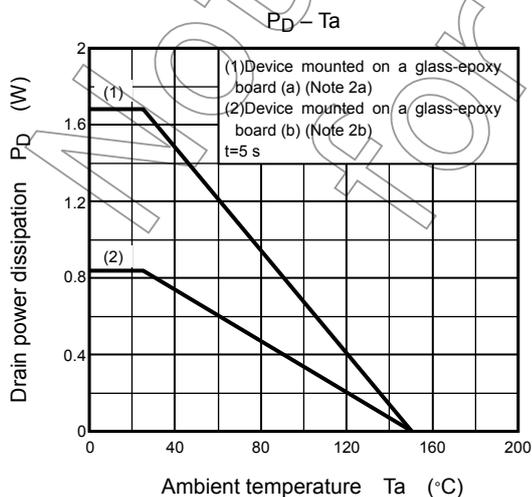
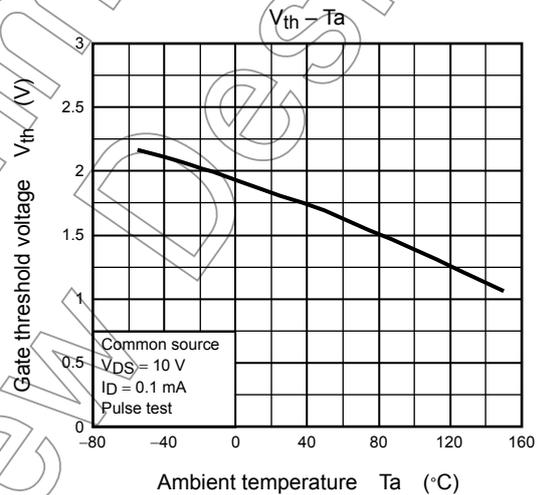
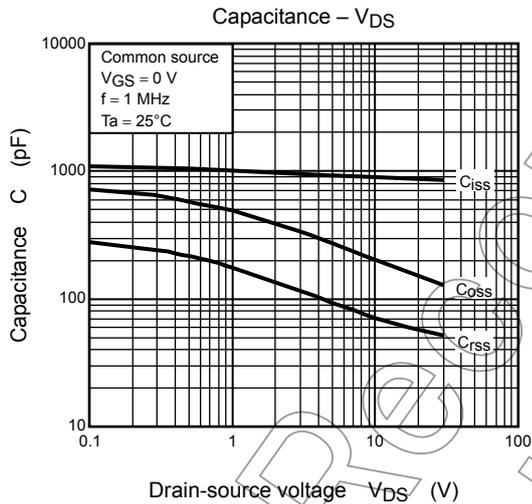
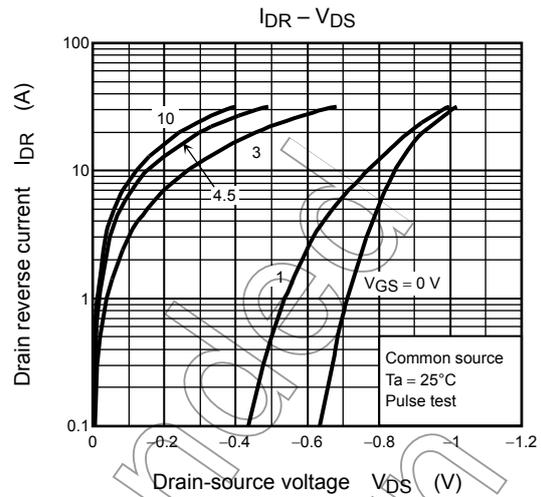
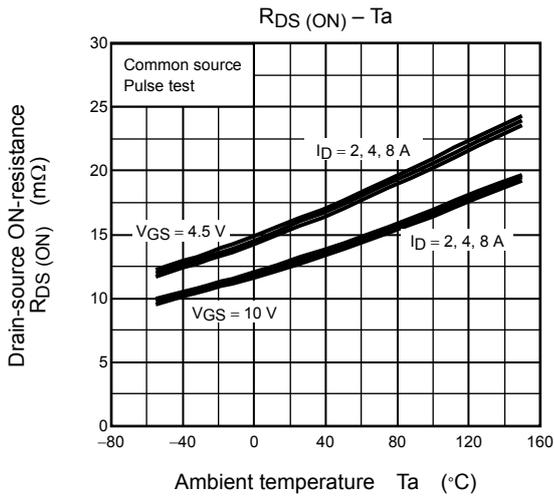
Electrical Characteristics (Ta = 25°C)

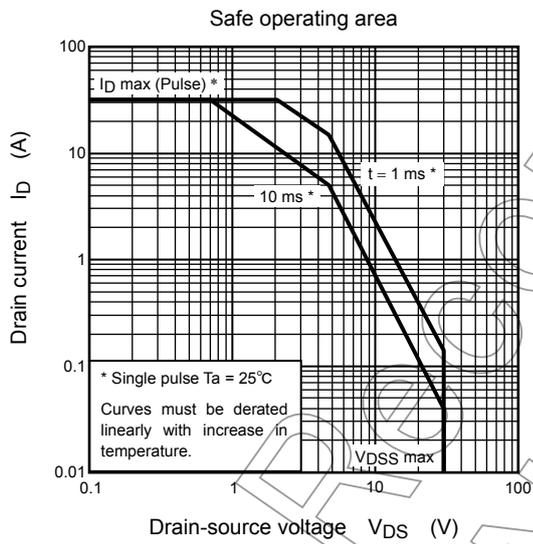
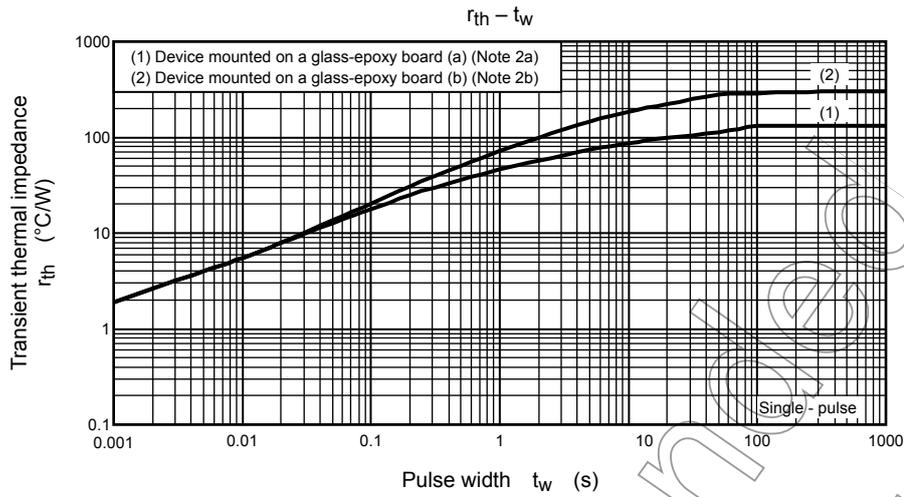
Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	—	—	± 100	nA
Drain cutoff current		I_{DSS}	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$	—	—	10	μA
Drain-source breakdown voltage		$V_{(BR)DSS}$	$I_D = 10\text{ mA}, V_{GS} = 0\text{ V}$	30	—	—	V
		$V_{(BR)DSX}$	$I_D = 10\text{ mA}, V_{GS} = -20\text{ V}$	15	—	—	
Gate threshold voltage		V_{th}	$V_{DS} = 10\text{ V}, I_D = 0.1\text{ mA}$	1.3	—	2.3	V
Drain-source ON-resistance		$R_{DS(ON)}$	$V_{GS} = 4.5\text{ V}, I_D = 4\text{ A}$	—	16	23	m Ω
			$V_{GS} = 10\text{ V}, I_D = 4\text{ A}$	—	13	20	
Forward transfer admittance		$ Y_{fs} $	$V_{DS} = 10\text{ V}, I_D = 4\text{ A}$	13	26	—	S
Input capacitance		C_{iss}	$V_{DS} = 10\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$	—	900	1170	pF
Reverse transfer capacitance		C_{rss}		—	65	104	
Output capacitance		C_{oss}		—	200	—	
Gate resistance		r_g	$V_{DS} = 10\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$	—	3.0	4.0	Ω
Switching time	Rise time	t_r	<p>$V_{GS} = 10\text{ V}$ $V_{GS} = 0\text{ V}$ $I_D = 4\text{ A}$ $V_{DD} \approx 15\text{ V}$ $R_L = 3.75\Omega$ 4.7Ω V_{OUT}</p>	—	2.4	—	ns
	Turn-on time	t_{on}		—	8.6	—	
	Fall time	t_f		—	13	—	
	Turn-off time	t_{off}		Duty $\leq 1\%$, $t_w = 10\text{ }\mu\text{s}$	—	31	
Total gate charge (gate-source plus gate-drain)		Q_g	$V_{DD} \approx 24\text{ V}, V_{GS} \approx 10\text{ V}, I_D = 8\text{ A}$	—	14.7	—	nC
			$V_{DD} \approx 24\text{ V}, V_{GS} = 5\text{ V}, I_D = 8\text{ A}$	—	8.0	—	
Gate-source charge 1		Q_{gs1}	$V_{DD} \approx 24\text{ V}, V_{GS} = 10\text{ V}, I_D = 8\text{ A}$	—	3.1	—	
Gate-drain ("Miller") charge		Q_{gd}		—	2.3	—	
Gate switch charge		Q_{sw}		—	3.8	—	

Source-Drain Ratings and Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Peak forward current	Pulse (Note 1)	I_{FP}	—	—	—	32	A
Forward voltage (diode)		V_{DSF}	$I_{DR} = 8\text{ A}, V_{GS} = 0\text{ V}$	—	—	-1.2	V







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